

THE LOSSIEMOUTH LEAD MINING COMPANY

(LIMITED).

INCORPORATED UNDER THE COMPANIES ACTS, 1862 AND 1867.

CAPITAL £30,000, IN 6000 SHARES OF £5 EACH,

Of which 5000 are Ordinary, and 1000 B or Deferred Shares, subject to the conditions hereinafter mentioned.
 £1 payable on application, £1 on allotment, and £3 in instalments of £1 each, at intervals of not less than three months.
 Interest at the rate of 5 per cent. per annum allowed on all sums prepaid.

In the event of no allotment being made the deposits will be returned without deduction.

DIRECTORS.

HENRY P. HARRIS, Esq., 56, Mansell-street, E.C., and Chase House, Hadley.
 JAMES HENDREY, Esq., Whitehall Club, Westminster, and The Hollies, Crystal Palace Park, Sydenham.
 JAMES L. SHUTER, Esq., Chamberlain's Wharf, Tooley-street, E.C., and Lawn House, Holloway.
 GEORGE TAMPIN, Esq., 159, Fenchurch-street, E.C., and 12, Manchester-square, W.
 JULIAN H. TOLME, Esq., 1, Victoria-street, Westminster, and 17, Dawson-place, Bayswater, W.

GENERAL MANAGER—LESLIE C. HILL, A.Inst.C.E., F.C.S., Civil and Mining Engineer.

BROKERS—JOHN HILL AND SONS, Bartholomew House, Bartholomew-lane, London, E.C.

BANKERS—IMPERIAL BANK, Lothbury, E.C.

SOLICITORS—JAMES BREND BATTEN, 32, Great George-street, Westminster.

FORSYTH AND STEWART, Royal Bank Buildings, Elgin, N.B.

SECRETARY—CHARLES CHAMBERS.

OFFICES,—66, CLEMENT'S HOUSE, CLEMENT'S LANE, LONDON, E.C.

PROSPECTUS.

This company is formed to purchase from Mr. L. C. Hill the lease of the Stotfield Lead Mining Property, situated near Lossiemouth, in the county of Elgin, N.B., together with all interest in the shaft and other workings, lead ore, plant, &c., now on the property, and to continue to develop and work the lead mines and lodes thereon.

The property is now held on a lease for a period of 19 years from the 14th November, 1875, which lease is to be surrendered, and the proprietor has agreed to grant a new lease to the vendor and others for a term of 21 years from the 14th day of November, 1877, according to the terms of a draft which has been agreed upon.

A copy of this draft lease may be inspected as below, in which it will be seen that full power is granted to work all minerals, and to use the surface for all legitimate mining purposes, subject to the usual conditions, on payment of a royalty of one-sixteenth of all minerals raised and sold, together with a dead rent of £1 per annum. Also that this lease includes the proprietor's rights to all minerals under the Moray Firth below high water mark adjacent to the other minerals.

The lodes run through waste uncultivated lands near the sea shore which are of little value, so that the surface damage will be very small.

Reports have been made on this property by competent mining engineers, from which it will be seen that—

The property is crossed by two powerful, almost vertical lodes, one running north east and south west, and the other east and west, which intersect each other near the shaft (see plan); the former has been traced ore bearing for a distance of 77 fms. east and 230 fms. west of the shaft.

There is a regular course of ore running along the south wall, which is estimated to be worth 2 to 3 tons of lead per fathom, and also an immense deposit is found, probably caused by the junction of the two lodes; the outcrop of this is exposed at low water, and is seen 100 ft. long and 27 ft. wide, containing good ore throughout, but is stated to be much larger.

Several thousand tons of dressed ore, worth £13 per ton, can be delivered f.o.b. at a cost not exceeding £8 per ton. Also that large returns can be made in six months, and that the mine is capable, when developed, of producing 200 to 300 tons of dressed ore per month, and even more.

Copies of these reports accompany this prospectus, and may also be seen, together with samples of the ore, at the company's offices.

It is confidently expected that, independent of the deposit at the junction, the ground to the south of and above high water mark will yield 150 tons of ore per month; and should this deposit improve and consolidate in depth, as there is every reason to expect will be the case, immense quantities can be raised.

From reasons stated in the reports no difficulty is anticipated from water percolating into the workings, but should this happen the small bay which is crossed by the lodes can be entirely cut off from the sea at a small expense. The shore is constantly forming, and has extended considerably during the last 18 months, so that by building groynes and tipping the waste rock into the sea the beach would soon form across the bay.

The proximity of the harbour and railway station affords unusual facilities for transport, and low freights may be obtained to Newcastle-on-Tyne, where the ore

can be sold for smelting, as vessels bringing coals from that port return at present in ballast.

Making full allowance for all expenses, including royalty, it is estimated that in permanent working the dressed ore can be delivered f.o.b. at cost not exceeding £7 per ton, and that this will be worth at the present low price (say) £11 per ton. Even taking the low estimate of 150 tons per month, this will give a profit of £7200 per annum, which would allow of a dividend of at least 20 per cent. on the total capital.

But as the richest deposits are always found at the junction of two lodes it is expected that when the main deposit is reached this output will be doubled.

Lead mining is well known to be the safest of all metal mining, and as it is considered certain that such powerful lodes as those found on this property will continue to a great depth, this undertaking is believed to bear as little risk as is possible in a mining enterprise, nevertheless it is intended to proceed with the utmost caution, and to sanction expenditure only for the development of the mine until further outlay is absolutely warranted by ore raised or in sight.

It is estimated that the sum of £3 per share will be sufficient to develop the mines and erect dressing floors, and it is not intended to make any further call until the mine has been proved, and then only in the event of further capital being required to provide pumping and hoisting machinery, tramways, &c., and to enlarge the dressing floors when the main deposit of ore has been reached.

The purchase price of the property is £8000 in cash, 1000 fully paid-up ordinary shares, and 1000 B or deferred shares, which bear no interest unless the net profits amount to £2000 per annum.

The only contracts entered into are—

1st.—That between Leslie Craswell Hill, of the one part, and James Brend Batten, on behalf of the Lossiemouth Lead Mining Company (Limited), of the other part, and dated 15th of March, 1878.

2nd.—That between Henry Lobb, of the one part, and Leslie Craswell Hill, of the other part, and dated the 23rd day of January, 1878.

A copy of the proposed lease, and of the contracts and reports, may be inspected at the offices of the solicitors to the company.

FORM OF APPLICATION.

To the Directors of the Lossiemouth Lead Mining Company (Limited).

GENTLEMEN,—Having paid to your bankers the sum of £ , being £1 per share, on application for shares in the above company, I request you to allot me that number of shares, and I hereby agree to accept the same or any smaller number that may be allotted to me, and to pay the balance due thereon according to the terms of the prospectus.

Name in full

Address

Profession, if any

Signature

1878.

Date

The Yniscedwyn Company, Limited.

REGISTERED UNDER THE COMPANIES ACTS, 1862 AND 1867.

CAPITAL £60,000, IN 6000 SHARES OF £10 EACH.

£2 per share payable on application; £3 per share on allotment, and the remaining £5 per share in two instalments of £2 10s. each, at two and four months from allotment, when all liabilities will cease.

DIRECTORS.

GEORGE GOWLAND, Esq.

W. H. LETHBRIDGE, Esq.

JOHN ROMANES, Esq.

P. W. SYDENHAM ROSS, Esq.

NICHOLAS SADLER, Esq.

(With power to add to their number).

BANKERS—THE IMPERIAL BANK (Limited), Lothbury, London, E.C.

SOLICITOR—ALEX. KERLY, Esq., Great Winchester-street, London, E.C.

AGENT—Messrs. LIVINGSTON, RICHARDS, AND BEAUMONT, Swansea.

SECRETARY AND OFFICERS.

W. H. HARRISON, Esq., 1, PALMERSTON BUILDINGS, LONDON, E.C.

This company is formed for the purpose of purchasing and working the well-known Yniscedwyn and Abercrombie Collieries, as well as the Yniscedwyn Steel and Iron Works, situate at Yniscedwyn, about 13 miles from the port of Swansea. The works are connected with the Midland, the Great Western, and London and North Western Railway (having their own branch railways and sidings, all of the standard gauge, capable of accommodating at least 1000 railway trucks at one time), and are thus in direct communication with all parts of the kingdom.

This extensive property (over 3500 acres of minerals, about 400 acres of surface, including several farms, a number of cottages, a mansion and agents' houses) is held upon exceptionally favourable terms, under various leases, particulars of which may be seen at the offices of the solicitor.

There are four large collieries, fine iron and steel works, together with a good-sized foundry, and altogether a most efficient plant.

The Four Collieries are all extensive, and contain six seams of the purest anthracite coal, with an aggregate thickness of about 28 ft., and are estimated to contain 37,000,000 tons of workable coal. One of the seams (the celebrated Big Vein) is over 9 ft. thick. There are also veins of ironstone and fire-clay, limestone, &c., all of which are elements of considerable value. The collieries are completely worked by the most costly plant, engines, boiler power—in fact, no outlay has been spared to bring the whole into the highest degree of perfection. From the pits an aggregate of at least 2000 tons of coal may be produced daily.

The Iron Works are among the oldest, if not actually the oldest established in the kingdom, and everywhere well known as the Yniscedwyn Anthracite Iron Works. They consist of two blast furnaces, hot blast stoves, and complete plant. The furnaces which were recently fitted and remodelled on the most approved principles, have been worked most successfully, producing a larger annual yield of iron per furnace than has been obtained by any other furnaces in this country using anthracite coal.

The two blast furnaces have not only produced pig-iron of the highest quality suitable for steel making purposes, but also spiegeleisen up to 17 per cent. metallic manganese, thereby far outstripping any of the German or other foreign manufactures, and commanding the highest prices in the market. This, of course, is the best test of any, and it is, therefore, scarcely necessary to refer to any other, but it may be worth while to mention that the trials of this iron under Mr. Kirkaldy's great breaking machine, at Southwark, gave some of the best results ever yet afforded with pig iron.

Yniscedwyn iron is in great demand for tin plate works, and South Wales being the chief seat of the tin plate manufacture, the works are much more favourably situated for supplying the pig iron required than the hematite furnaces of Barrow and elsewhere.

The Steel Works have been built under most elaborate designs, and in a most costly manner, but are not yet quite completed. They will require an outlay of between two and three thousand pounds to get into operation. It should be understood that the steel made is not the common steel of the Bessemer or Siemens process, worth from £7 to £10 per ton, but Sheffield tool or cutting steel, worth £60 per ton, or even more, in samples of exceptional excellence. The trial samples of this steel, submitted to Messrs. Robt. Hadfield and Co., the large steel casting company in Sheffield, realised results never yet obtained by either Swedish or Russian steel and in their printed report it is stated that if only equal quality could be maintained, a full market and high prices were assured. As this steel process is founded on purely practical, though at the same time scientific principles, there should be no difficulty in ensuring the like results from using the like materials; the great point being the purity of the fuel, as it is not difficult to purchase fairly good iron ores. Pure fuel, however, is of a most exceptional occurrence, and now that steel is pretty sure to supersede iron for many purposes, it is likely more than ever to command a high price.

Apart from the profit likely to be derived from the development of the steel manufacture, and reckoning only upon a restricted output of coal and a moderate make of iron, the profit may be fairly estimated as follows:—

| | |
|---|-------------|
| 150,000 tons of coal, at 1s. per ton | £ 7,500 0 0 |
| 18,000 tons of iron, at 6s. 2d. per ton | 4,131 17 0 |

Equal to ... £11,631 17 0 per annum.

This amount of profit would after payment of charges of all descriptions, admit of dividends at the rate of about 14 per cent. on the capital of the company.

That profits to the amount named are the least which may be calculated upon is clearly indicated by careful reports, based upon data afforded by the raisings of coal at these collieries for some years, according to which the cost of working a fair quantity of coal would be from 4s. to 4s. 6d. per ton. The numerous orders now in the hands of Messrs. Livingstone and Co. may be taken as a proof that 5s. 6d. to 6s. 6d. per ton may be realised. At the Iron Works an average of over 12,000 tons per annum was produced at a profit of about 9s. 2d. per ton, and during September, 1876, the average cost of making 1183 tons of pig iron was 63s. 9d. per ton. It is calculated that iron can now be made at Yniscedwyn for under 61s. per ton, and as the cost of labour and material is considerably lower than in September, 1876, when iron was made for 63s. 9d., it will be seen that this estimate of cost is not only well founded, but may be said to be an outside one.

From enquiries made at the offices of some of the best firms in South Wales, it has been ascertained that there would be no difficulty in obtaining a ready sale for all the iron which can be turned out at from 71s. to 73s. per ton.

An estimate of the value of the property may to a certain extent be formed from an extract from the balance-sheet of the last owners (which will be found with the prospectus), showing the outlay made upon the plant and from the valuations of Messrs. Daniel, who deservedly occupy a very high position as engineers in South Wales. These afford sufficient evidence of the great worth of the property and the very reasonable terms upon which it has been acquired. The valuation of Messrs. Daniel was (as a reference to their reports will show) £137,472.

The plant and machinery are so extensive, and in such perfect working order, that little, if any, expenditure will be required upon them; and, as payment for coal sold will be immediately forthcoming, only a small working capital will be found necessary. To provide against contingencies it has, however, been deemed prudent to reserve a sum of 10,000l., which will allow of a sufficient working capital for all purposes. These properties possess exceptional advantages, which will enable profits to be realised in bad times, when others not so well circumstanced can only be worked at a loss.

An agreement has been entered into, dated 20th July, 1877, made between the Yniscedwyn Iron, Steel, and Coal Company (Limited), of the first part; Samuel Lowell Price, of the second part; Henry Wethered, of the third part; Henry Child Beddoe, of the fourth part; Henry Robert Beddoe, of the fifth part; Evan Patehall, M.P., of the sixth part; John Alexander Forbes Suter, of the seventh part; William Paterson, of the eighth part; George Bullock Murly, of the ninth part; Thomas Turner, of the tenth part; Frederick Robertson Kempton, of the eleventh part; Henry Oliver Robinson, of the twelfth part; Charles Ling, of the thirteenth part; John Vibart, of the fourteenth part; Charles Julius Ryland, of the fifteenth part; Henry Murly, of the sixteenth part; the Rev. Wm. Leyland Fellden and Oswald Barton Fellden, of the seventeenth part; Sarah Julia Jay, of the eighteenth part; and Thomas Callender Hinde, of the nineteenth part. Also an agreement, dated 7th day of September, 1877, made between Thomas Callender Hinde, of the one part, and Frederick Warwick and Thomas Thompson the Younger, of the other part. The company obtains the property on the most favourable terms—viz., 3500 fully paid shares, and the discharge of certain claims upon the property in cash, amounting to about £15,000; subject, however, to three existing mortgages, amounting in the aggregate to about £43,750, which may be paid off gradually. The expenses in the formation of the company, including those of Mr. Warwick and Mr. Thompson, are provided for in the above contract by the vendors, who bear all charges to the date of incorporation.

Prospectuses may be obtained on application at the offices of the company, and at the solicitors, where copies of the contracts for the purchase may also be seen.

Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES—No. LXIX.

BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,

Certificated Mining Engineer.

(Formerly Student at the Royal Bergakademie, Clausthal).

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SECTION V.

[A great pressure on our space has compelled us to postpone the publication of the Lectures this week. They will be resumed in next Saturday's Journal.]

MODERN BLASTING EXPLOSIVES.

At no period in the history of the civilised world has the adage "Time is money" been more forcibly illustrated than in the actual demand by the mining community for the strongest explosives—or, in other words, for the explosive which will produce the greatest effect with the smallest labour or time employed in boring holes to receive the same, or in tamping. Again, the military engineer keeps himself au fait of all new destructive agents which, under the smallest weight, will do the most mischief, the most essential point in using explosives in the field being to place the charge on the proper spot at the proper time, which means quick carriage and hence small weight. Chemistry and engineering have not been slow to respond to the demand, and amongst the host of explosives which have been brought forward at different times there are some two or three which have attained a decided pre-eminence, each in its way. We refer to dynamite, tonite, and compressed gun cotton.

The literature of modern explosives exists only in the shape of papers read at institutions, and pamphlets from scientific specialists. We will endeavour in the following lines to gather a few notes which we believe may be of some value both to the scientific and the practical man. It is not our intention to dwell at length on what might be called the earlier history of the explosives under consideration. We will only call to mind the points of interest which have marked their progress towards practical utility. It is well known that gun cotton was first introduced to the public by Schonbein in 1846. Great things were expected from the discovery, and yet in a few years, after a brief but eventful career, gun cotton was relegated to the laboratory shelf, and amongst the sufficient causes for such a proceeding we may mention the inability of the makers to produce a stable article, and also the enormous bulk occupied by a charge of the explosive, as well as its inherent property of disengaging upon explosion a large amount of carbonic oxide gas, which, in close workings, is not only objectionable on account of health, but absolutely dangerous as fire damp. Ways and means as ingenious as numerous were tried in divers countries to master this promising but crude invention, but the only improvement, partially successful, was for a long time obtained in nitrating the gun cotton with saltpetre. This material reduced the carbonic oxide and added considerably to the strength of the gun cotton, but the fumes resulting must have been very inconvenient, as the carbonate of potassa produced very readily remains in suspension in the atmosphere for a long time, not to mention the almost inevitable presence of cyanide of potassium, but the most potent objection to its use was its liability to explode spontaneously.

Things were in this condition, and ordinary gunpowder continued to reign supreme, when Sobrero somewhat before 1860 introduced his nitroglycerine. New hopes were raised, and as a consequence money, labour, and ingenuity were devoted to the work, but nitroglycerine, like gun cotton and, indeed, all great inventions, had a hard fight before it could inspire confidence in the public, for the material as then made was very unstable, and even when pure—chemically stable, if we may use that expression—it was liable to disruption from physical causes. One of these, still unexplained, happens during the passage of the frozen nitroglycerine from the solid to the liquid state, as if the crystals were suddenly broken by a too sudden application of heat, as in the well-known decapitation of common salt; a similar theory has been used to explain explosions which sometimes occur with fulminate of mercury when this substance is put to dry, which, although quite pure, may explode at a temperature far below its normal exploding point.

Now we come to one of the important epochs of invention—the discovery of dynamite by Mr. Alfred Nobel. Dynamite is nitroglycerine mixed with an earthy absorbent, the result being a plastic instead of a liquid substance, and therefore more manageable, the tendency of the nitroglycerine to spontaneous explosion in thawing being considerably reduced by reason of the modification in the structure of the compound. The nitroglycerine used in the manufacture of dynamite can now be made quite pure, so the enormous consumption of the produce is justified in the absence of any competing explosive. Let us hope that Mr. Nobel will by his intended new admixture entirely destroy the causes which bring about the terrible calamities frequently reported in the papers, such as that at Parma, and at Bangor quite recently, where dynamite exploded while being thawed. During the period of the progressive success of nitroglycerine and dynamite, gun cotton had a hard struggle for existence, the best, if not almost the only, friend of the latter substance being Professor Abel, F.R.S., who with a clear practical mind, recognising that no inherent property of gun cotton stood in the way of its practical employment, set himself to solve the problem of its utilisation. First he cut the gun cotton fibre into pulp, thereby reducing its bulk and improving the stability of the gun cotton by permitting a more thorough washing. It was then found that the power of exploding by a flame was very much reduced, in consequence of the closer texture of the compressed dry pulp, but as Mr. Nobel had successfully applied the detonator to his dynamite, so did Mr. Brown, of Woolwich, succeed in producing a first-class explosion with gun cotton thus detonated.

These are splendid achievements, and the next step—nitrated pulped gun cotton—was actually making its appearance when occurred the Stowmarket calamity, which drove all confidence away for a time. It was then proposed to use the pulped and compressed gun cotton in the wet state, as it was found that it could be exploded in this condition by using a strong primer of dry gun cotton; indeed, large quantities are now being employed under this condition, but of course all thoughts of using a nitrate with it was abandoned, as saltpetre does not answer in conjunction with wet gun cotton. This was very regrettable, as it is well known that by nitrating gun cotton its strength, as measured by the best energy it can produce, is increased fully 30 per cent., and, moreover, no carbonic oxide is produced—a very important item in ill-ventilated workings. Un-nitrated and wet compressed gun cotton is mainly used for military and naval purposes, on account of its safety over dynamite and its remaining unaltered by climatic changes; at all events, it is relatively easier to keep it from freezing. Miners, however, who buy explosives for profitable purposes, will not use it in any quantity. There remained, therefore, ample room for further progress in dry nitrated gun cotton compressed to the smallest bulk. This has been obtained in an explosive called tonite, manufactured by the Cotton Powder Company of Faversham. The remarkable results obtained by the officials of that company in producing this explosive renders unnecessary any apology on our part for explaining at some length what these results are, and how much the mining community, and, indeed, the nation, may be benefited by their labours. About 1873 the Cotton Powder Company, under a somewhat different name, commenced operations, their object being, amongst other things, to produce nitrated gun cotton according to the terms of their license, and, commencing so soon after the great catastrophe at Stowmarket, it required no small amount of courage to attempt the manufacture of apparently a similar explosive, although it offered a most promising reward to success.

Tonite or cotton powder is now well known to all mining engineers under the shape of a dense dry cartridge; it is generally

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergsch, Dr. von Groddeck, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.

waterproofed, and is not altered by any conditions of temperature. The density of tonite is about 1.50—that is, it goes into the same space as dynamite, and in about two-thirds that of compressed gun-cotton. The base of tonite being gun-cotton the first care of the manufacturers was to devise practical means of purifying that substance, which being produced of ordinary cotton steeped in mixed sulphuric and nitric acids contains in its crude state some portion of that mixture, with other nitro compounds. The free acids are easily eliminated by washing with water, with or without alkaline addition, but the nitro compound impurities—nitro-starch, nitro-glycerine, and other products of the resins, sugar, and impurities of the original cotton—are not so easily got rid of, being insoluble, and being imprisoned in the capillaries of the cotton fibre. It had been long known that the chemical student that inferior nitro compounds are partly destroyed by boiling water, and that ammonia is a very powerful reducing agent of these compounds. It only needed practical hands to unite the processes. As the cotton plant now stands at Faversham any quality of gun-cotton can be purified to its dangerous impurities in about two hours, and the same process applied whether the fibre is very long or very short. This process has been in operation for about five years with perfect success, and we understand that it is partly followed at the Government works at Waltham Abbey. It can at all events be assumed that Prof. Abel has satisfied his mind about the value of such washing or boiling process, for it will be remembered that at the last meeting of the British Association, at Portsmouth, he said that gun-cotton could now be made quite reliable.

From pure gun-cotton to dry nitrated powder there is only one step—choose the proper nitrate. Before settling this point we may dismiss chloride of potash, the most powerful of all available oxidising agents. It is known that gun-cotton used with the proper quantity of chloride of potash is superior as a blasting agent to the best nitroglycerine, but, like this substance, it is liable to explode under the slightest rough usage. The available nitrates for mixing with gun-cotton are the nitrates of ammonia, potassa, soda, baryta, strontia, &c. The nitrates of ammonia, soda, and to a certain extent strontia, are deliquescent, and have never been used with any success for a length of time; all these nitrates except that of baryta are very soluble, and thereby interfere with the manufacture, and, moreover, give very disagreeable fumes in the mines. In short, after many trials nitrate of baryta was definitely chosen. *Prima facie* it is the best suited to the purpose, as containing more earthy base in a given weight, but if we bear in mind that in mining the space occupied by the explosive is more an object than its actual weight, and as it is possible by the use of nitrate of baryta to lock up under the very smallest possible space a larger amount of energy than by the employment of any other nitrate, the choice then appears justified. There is another point to be considered in favour of tonite—its economy of manufacture. Tonite can be made at 40 to 50 per cent. less cost than gun-cotton, and of 30 per cent. greater strength. In these times of heavy military and naval expenditure it might be well worth considering what would be the economy to the nation in substituting tonite for ordinary wet gun-cotton, considering that the former is quite as safe, if not safer, than the latter, for wet gun-cotton stored in South America has lately given cause for serious doubts as to its stability.

We have said enough for the present to show that the question of a blasting agent is being vigorously studied, and that progress has been made; there are, however, a great many other very important points which will suggest themselves to the consumer, such as those under the head of plastic explosives and solid cartridges, &c. These have been well tested, every experiment conforming with those thermodynamic theories, which teach us that heat alone is force irrespective of space, and as the miner's chief object is to economise space, to minimise his boring, and the issue as between solid tonite and plastic dynamite is only about 5 per cent. of space, when all the pleas are considered, the question may be pronounced practically settled against dynamite in favour of its younger cousin tonite, against the daughter of nitroglycerine in favour of the offspring of gun-cotton.

THE MANUFACTURE OF IRON AND STEEL.

No man better deserves the warmest thanks of our ironmasters than Mr. I. LOTHIAN BELL, seeing that for years past he has devoted a great deal of time to finding out the best means for producing pig with the smallest consumption of fuel. In conjunction with other North Country makers, he has succeeded, for he tells us that where not so long since 70 cwt. of coal were required to make 1 ton of pig, the same is now accomplished with from 41 to 45 cwt. That is with respect to the Middlesborough ironstone, which is by no means rich, giving only about 30 per cent. of metallic iron, whilst for Spanish, and other ores yielding 50 per cent. of iron and upwards, the quantity of coal for smelting would be probably 5 cwt. per ton of pig less. This great economy in fuel in the manufacture of iron has been of the greatest benefit to the country, as it has enabled us to supply even continental makers with pig at a less price than they could produce it. But Mr. BELL has gone further, and in another direction has endeavoured to produce iron from Cleveland stone so clear of phosphorus that it can be readily converted into Bessemer. This is the great difficulty to be overcome in the conversion of such ores into steel for rolling, and Mr. BELL appears to have gone into it most thoroughly, and if the results are not all that could be desired, he is certainly on the high road to success. For the purpose of freeing the pig from its impurity, Mr. BELL washes out the phosphorus by means of oxide of iron, and the question naturally enough arose as to whether or not the process would be too costly to pay. It appears that about 10 cwt. of oxide of iron is used with every ton of pig, and if that would cost 10s. then it was considered that it would scarcely pay. But it is quite probable that a much less quantity of oxide of iron may be found in future manipulation to attain the desired results. One of the most important points to be realised is as to the quantity of phosphorus that could be left in a steel rail without injuring it in any way, for as we all know that it is the great enemy of both the Bessemer and open-hearth manufacturers, yet for some purposes even in steel it may be a valuable ingredient. Formerly spiegel-essens was used to decarbonise Bessemer steel to impart manganese to the oxygen of the oxide of iron formed in the Bessemer process, but now it is adopted not only to remove the oxygen, but to mix the manganese with the steel; and it has been asserted by a high authority that if the proportions of silicon and phosphorus were sufficiently low, and the carbon did not exceed a third of 1 per cent., manganese to the amount of three-quarters of 1 per cent. would give the resulting product a high degree of toughness and hardness combined—a degree of suitability for rails which no proportion of either carbon or manganese not associated could impart. But we are told that in the Great Northern Bessemer rails as much as 0.274 per cent. of phosphorus has been found, but the question really appears to be as to what amount of phosphorus a rail would stand without impairing it in any way. This satisfactorily determined, the experiments would be resumed by Mr. BELL with greater certainty of succeeding. He would also be able to define accurately the different proportions of the various ingredients that are necessary for bringing out a certain quality of steel, which can scarcely be said to be the case at present, although we are frequently told as to the elasticity and resistance of steel by testing.

But that steel is about to undergo another revolution is pretty evident, for at the recent meeting of the Iron and Steel Institute, on the discussion of Mr. BELL's paper, Mr. SNEUS said that six years ago he took out a patent for converting Cleveland pig into steel, and in reducing the phosphorus in it to under 0.1 per cent., using limestone for the lining of his furnace. He said he had such confidence in his patent that he intended renewing it, although it was six years old. This process no doubt would be less expensive than that of the oxide of iron, but there appears to be some difficulty in the carrying out of the process with respect to the furnace; but, if all other details can be successfully carried out, no question but what that will be easily overcome. But a still greater surprise was in store for the members of the Institute by Mr. SIDNEY THOMAS declaring that he had succeeded in entirely removing phosphorus by the Bessemer converter. This was certainly a startling announce-

ment to make, and equally so was the statement that he had the results in his pocket of more than 100 analyses of different experiments for the very small quantity of 6 lbs. up to 10 cwt., and all the results carried out the theory with which he originally started. In the worst results 20 per cent. of phosphorus was removed, and in the best 99.9. This latter result one would think would be sufficient for anything, and we feel sure the particulars will be looked forward to with much interest by our ironmasters and Bessemer makers. We have, however, three distinct processes before us by which the phosphorus can be eliminated from Cleveland iron, and the latter converted into Bessemer steel. As to the comparative merits of each process there is not sufficient data before us to give an opinion, seeing that each proposal may be said as yet to be in only an embryo state. But before long it is to be hoped detailed results of further experiments will be given, when the public will be in a position to judge of their respective merits. In the meantime we understand Mr. BELL will proceed with his experiments, and without ignoring the claims of others in the same field to every consideration, we believe we only echo the feeling of all persons connected with the iron and steel trades in wishing him every success.

GEOLOGICAL SOCIETY OF LONDON.

April 3.—HENRY CLIFTON SORBY, F.R.S. (President), in the chair.

Rev. Albert Augustus Harland, M.A., F.S.A., Harefield Vicarage, Middlesex; and Thomas William Shore, Hartley Institution, Southampton, were elected Fellows of the Society.—Charles Preller Scheibner, Ph.D. (Leipzig), A.I.C.E., Charles-street, Grosvenor-square, was proposed as a Fellow of the Society.

The following communications were read:—

1.—“On an unconformable break at the base of the Cambrian Rocks near Llanberis,” by George Maw, F.L.S., F.G.S.

2.—“On the so-called Greenstones of Central and Eastern Cornwall,” by J. Arthur Phillips, F.G.S. During the discussion Prof. Ramsay expressed his gratification at the thorough-going nature of the author's researches, and was especially pleased that Mr. Phillips had found that many of the rocks exhibited such close resemblance as to justify the use of the term “greenstones.”

3.—“The Recession of the Falls of St. Anthony,” by N. H. Winchell, communicated by J. Geikie, F.R.S., F.G.S.

The next meeting of the society will be held on April 17, when the following communications will be read:—1. “On the Geological results of the Polar Expedition under Admiral Sir George Nares, F.R.S.,” by Capt. H. W. Feilden, R.A., F.G.S., and C. E. De Rance, F.G.S.—2. “On the Palaeontological results of the Polar Expedition under Admiral Sir George Nares, F.R.S.,” by Capt. H. W. Feilden, R.A., F.G.S., and R. Etheridge, F.R.S., F.G.S.—3. “The contemporaneous appearance of the Teesdale Whin Sill,” by C. T. Clough, F.G.S.

THE YORKSHIRE COLLEGE OF SCIENCE.

The great want of some such course of instruction as that offered at the Yorkshire College of Science was frequently asserted as a reason for the establishment of the institution, and the results have fully confirmed that view, for it appeared at the fourth meeting of the Students' Class, held at the College on Monday evening, that no less than 26 had joined it, and what is still more gratifying, is that these are of various ages and positions. The reason of this success is not difficult to discover—the executive have been careful to provide precisely the kind of instruction which is required by those likely to attend the classes. By way of example, reference may be made to the syllabus of Mr. LUPTON's course of lectures in the Department of Coal Mining, which is maintained by the Worshipful the Drapers' Company of the City of London. Through the liberality of this guild to secure the services as instructor of a mining engineer and colliery manager of great intelligence—Mr. ARNOLD LUPTON, F.G.S., M.I.C.E.—and his present course of lectures embraces the “Theory and Practice of Coal Mining, Mining Engineering, and Colliery Management.”

The thoroughly systematic arrangement of the syllabus cannot be too highly commended. Commencing with the discovery and preliminary explorations of a coal field, the lecturer explains the various modes of boring by hand, by steam machinery, rigid rods, the rope system, the diamond drill, and so on. The value of coal seams, workable and unworkable, is also explained. Next comes the method of winning a coal field, in connection with which levels, inclines, shafts, &c., are described, the mode of choosing the situation of shafts, the nature and size of works, and how to estimate the cost of works, being carefully explained. With regard to shaft sinking, the student will be given full information on dry sinking, wet sinking, the sinking set of pumps, timbering, walling, tubbing of cast-iron, cement walling, and sinking machinery. Nor are the difficulties occasionally met with neglected, the next subject treated of being sinking through quicksand, the method of pile driving, by brick and iron cylinders, the pneumatic process, the Kind-Chaudron system, and sinking through the New Red Sandstone being in turn referred to.

The coal field having been discovered, and the shafts sunk, the first step will necessarily be to lay out the pit. This will be fully explained by Mr. LUPTON in dealing with tunnels and cross-measure drifts, systems of working coal, long-wall, modified long-wall, pillar and stall, &c. That the student may be equally competent to fulfil his duties wherever he may be employed, careful attention will be given to the various methods of working pursued in the Midland Counties, Northern Counties, Lancashire, South Wales, North Wales, France, Belgium, and Germany. In connection with ventilation the principles and practice are to be explained, the coursing and splitting of air currents, and so on; the effect of changes of weather, and the use and abuse of the barometer being specially mentioned. The gases found in coal mines, and the temperature of coal mines affected by depth and by working, are described, and then colliery management generally is very fully treated of. Safety and colliery are first considered in this connection, and then the Act of Parliament regulating mines, general and special rules, and additional rules and precautions, are explained. To this part of his syllabus Mr. LUPTON very properly attaches much importance, and no doubt many will benefit from his observations on discipline and the general principles that should regulate the dealings of a colliery manager with his men, his employers, and in commercial transactions. He likewise explains colliery accounts and cost-sheets, and surveying and levelling underground.

The remaining portion of the course may be regarded as referring more particularly to the raising of coal, and is to be devoted to the questions of winding-engines, pumping-engines, underground haulage, air-compressing engines, coal-cutting machinery, safety-lamps and naked lights, trams and cages, signals, surface work, and boilers and fittings. It will thus be seen that the course is very complete, whilst the price is extremely moderate—the cost of attending the entire course, including the college entrance fee, being only 22. 9s. To candidates preparing for the examinations for certificates of competency such a course must be invaluable, and the executive of the College are certainly entitled to warm congratulations for the exertions they have made.

STEAM-BOILER EXPLOSIONS.—Believing that steam-boiler explosions may in the majority of cases be prevented by competent inspection, the Manchester Steam Users' Association are desirous that the Government should make such inspection compulsory. In furtherance of this object the President, Mr. Hugh Mason, has addressed a letter to the Home Secretary and each member of the House of Commons. Having pointed to the loss of life occasioned by boiler explosions, and the fact that the result of investigations made under the direction of the Association has been to show that competent inspection would in most cases prevent an explosion, Mr. Mason contends that it is the duty of the Government to interfere in the interests of the public safety, and to put some judicious pressure on steam users, so as to stimulate them to the use of due precaution. While thanking Mr. Cross for the interest he has evinced by sending on two or three occasions a legal or scientific assessor to assist the coroner at his inquisitions consequent on boiler explosions, the Association cannot but think any attempts to attain satisfactory investigations with regard to boiler explosions by coroners' juries will prove useless, and, therefore, they urge that such investigations should be held by some other court more competent to deal with scientific questions. The letter continues:—“Should it be thought desirable that governmental action should be en-

ried a step further, and that it should be enacted that no boiler should be allowed to work unless annually examined and certificated, the Association would be prepared to submit for consideration a measure to that effect, which would secure the safety of the public without harassing the steam user. The committee entertain a most wholesome dread of governmental interference with the management of private concerns, and being themselves large users of steam-power, would purpose no measure for adoption that would prove injurious to boiler owners. The course, however, the Association recommends for immediate adoption is not a system of compulsory inspection, but the institution of a searching investigation by a duly competent court in the event of every explosion, whether fatal or not. It is hoped that such investigations would of themselves stimulate steam users to an exercise of due precaution, while should this unfortunately prove not to be the case, the information accumulated by such investigations would afford a safe basis for further legislative enactment.”

Meetings of Public Companies.

BLUE TENT CONSOLIDATED HYDRAULIC GOLD MINES OF CALIFORNIA.

The annual meeting of shareholders was held at the offices of the company, Austinfrars, on Tuesday.

Mr. J. IRVING COURTENAY (the chairman) presiding.

Mr. W. J. LAVINGTON (the secretary) read the notice calling the meeting; the directors' report was taken as read.

The CHAIRMAN said: Gentlemen, since I had the pleasure of addressing you I have again visited the property of the company in California, and examined the whole of it in detail. The improvements and changes effected since my last visit are so numerous and extensive that I hardly recognised some portions of the property, the old landmarks having been entirely removed. The canal was the chief work accomplished, and I felt pleasure in walking along its banks and over its lofty trestlework and flumes, whilst remembering the anxiety and labour it had given to Mr. Price and others who were engaged in its execution. It gave a large volume of water to the mines last year, short as the season was, at a cost of 2.63 cents per ten-hour inch of water delivered at Blue Tent, the market price for water being 6 cents. The canal is as solidly constructed as any canal I saw in California. In severe winters it will, of course, sustain some damage, but every precaution has been taken by building snow-sheds completely over the aqueduct in exposed places to protect it as far as practicable against snow slides, and it has been strengthened wherever experience showed that serious pressure might be expected. We are glad of a heavy snowfall, because it gives summer water, and we are content to have some injury done to our canal rather than not have plenty of snow. California last year suffered like other portions of the world from a deficient rainfall, the total at San Francisco being only 10 in., while for the present season it is already 30 in., of which 20 in. fell in February. All the hydraulic mines which do not possess large storage reservoirs had to shut down early, and at Blue Tent we stopped washing at the end of August, as we had no water of our own, neither had the South Yuba Company any left to sell us. Anything more annoying or more detrimental to our interest than to be compelled to stop working at the most favourable season of the year could scarcely occur, and I resolved to do my utmost to mitigate this calamity for the future. Lakes containing a fine body of water I saw in the Sierra Nevada mountains, not far from the head of the Blue Tent Canal, but they might as well have been in Cumberland for all the use they were to us. I hope, however, that next August, with the assistance of the Fall Creek Lakes Water Company, the water from these lakes will pour into our canal. You know we are entirely dependent on water-power, and we must do in some shape or another what the large American companies have done—store up out of the surplus water which Nature gives in winter and spring a supply for dry summer and autumn months. You now have an opportunity of doing this to a moderate extent, and I therefore, urge you strongly to regard to your own interests to assist the Fall Creek Water Company in making the connection with all speed between their lakes and the Blue Tent canal during the approaching summer. I have dwelt long on the subject of water because of its vital importance to the prosperity of the company. (Hear, hear.) We will now turn to the mines, and here I note a most marked improvement in their productive-ness, for whereas the yield for 1876-77 was 6882. 9s. 11d. the yield for 1877 was 21,347. 18s. 10d. (Cheers.) This confirms the anticipations of an increased output of gold as our mines become more opened, and also of the greater productive-ness of the gravel as we work further on towards the Gopher Ravine. The yield per inch of water for 1876 was 23½ cents, while in 1877 it has increased in the South Yuba claim to 32½ cents, or 78 cents per miner's inch of water. The more we open the property in the direction of South Yuba and Gopher the better results we get, for we are able to work more hours each day, and wash in each season more bottom gravel. To those who remember the cramped and confined dimensions of the South Yuba pit three years ago the wide sweep of gravel bank now exposed is very striking. The photograph on the table gives an excellent representation of this part of the property, and assists those who have not seen the actual spot to appreciate and comprehend the operations in progress. This claim during the past season produced \$72,359 95 cents, and the profit, as worked out in the general manager's report, is \$37,965 92 cents. The number of working days of ten hours each is 189, so that each working day produced a profit of 40l. I trust that the alterations made last autumn, and the fitting up of the Gopher Ravine, will enable us to work still more continuously, and during this season (instead of 189 days) to put in not far short of 400 working days. I have no doubt you have carefully studied the interesting statement at the end of Mr. Price's report, which gives the yield in gold per cubic yard of gravel per ton, and the yield per ton of gravel per ton of water. When in California I heard some tall figures given of the yield of certain hydraulic mines per cubic yard of gravel, which would make their gravel richer than ours at Blue Tent, but I venture to think that few of them can show a better record than the South Yuba Gravel did last season when it is remembered that we washed the entire bank right from the top to the bottom, and that the whole mass paid 78 cents to the miner's inch of water. The gold is now being gathered from the washings near the point which, in the photograph, puts out conspicuously, and the intention is to wash through this point so as to make a continuous face of bank to the Gopher claim, and from Mr. Hughes's last report I judge that good progress is being made. This brings me to the consideration of a very important improvement that was effected on this part of the property last autumn, by which we expect to make a considerable saving in the working cost, and to gain increased facilities for working the bottom gravel. As you stand in the South Yuba pit and look up at the upper portion of the gravel bank, which is some 150 ft. above you, a streak of large boulders is plainly visible running along and through it. When the bank is loosened by the action of the water these boulders fall into the pit and cause serious delay and expense in their removal, for the washing has to be stopped whilst they are being blown and moved out of the way. Now, having fitted up the Gopher Ravine with sluices on a steep grade (14 in. to every 12 ft.), we are attacking the bank on the other side, and are washing down the top gravel and boulders into the new sluice way, which carries off the large rocks by the force of the water alone without the aid of powder or manual labour. The upper gravel washed off in this manner, the rich bottom gravel will be more readily removed, as both powder and water have less work to do, and we may expect, as I said before, a considerable increase in the number of working days, and a corresponding increase in the amount of gold produced. The work ought and would have been carried out in 1876, but for financial considerations. The Enterprise claim lately has given us much trouble, as detailed in the report of Mr. Price, and he decided to cease washing it for the present. You know we have been working top gravel only in that portion of the property, and this stratum became so cracked and loosened that enormous masses kept sliding in upon our pipes and sluices. Our predecessors also stripped off the upper gravel over a large area, and the richest portion of the gravel is now uncovered. I hope ere long the company will find itself in a position to begin operations for the working of the rich bottom gravel. We used in the Enterprise claim 330,450 in. of water, while only 222,355 in. were used on the South Yuba; the Enterprise gave 9 cents per 10 hour inch, while in the latter the gold yield was 32½ cents, or more than three times as much. The difference is caused by our washing top gravel only in the Enterprise, not having a tunnel in this section of the property to wash the bottom gravel through. You can readily see what a difference in the results there would have been had we been able to use the bulk of the water upon the South Yuba Gravel instead of the Enterprise. (Hear, hear.) Another part of the property is rapidly coming into prominence. I refer also to the Blue Lead claim. It is close to the South Yuba, and there is every reason to expect that when we get some distance further in the channel the gravel will prove itself equal to that of its neighbour. This opening up is a costly business, for powder must prepare the way for the water, and the banks are 200 to 300 feet in height—I might call them cliffs—they must be shaken from their base if the water is to do good execution. A blast I fired in the Blue Lead claim contained 10 tons of powder, and there did not seem to be any too much lifting power for the work to be done. Amongst other things a new reservoir has been constructed, which will prevent water being wasted which has hitherto occurred, and I should not be in the least way surprised were it to pay for its cost in one year. With these improvements, apart from the other causes alluded to in the directors' report, the liabilities have necessarily increased. We would most gladly have avoided these outlays, but they were imperatively called for; it comes to this—that if these various works had not been carried out at once the mines would not have been in a position to do profitable work this season, and when you know by actual results that you possess a valuable property, for Blue Tent is now classed among the leading hydraulic mines in California, I think that its development should be pushed on as rapidly as circumstances permit. (Hear, hear.) Our superintendent (Mr. Hughes), whose acquaintance I had much pleasure in making, is devoted to his work. He is an experienced and skilful miner, and will, I feel sure do his utmost to assist the general manager in all his plans and efforts for the benefit of the company. (Hear, hear.) The authorised debenture interest has been completed since our last report, and we shall ask you at the extraordinary general meeting to pass the resolution of which you have had notice, and so strengthen the hands of the directors by giving them power to deal with the floating liabilities of the company should a favourable opportunity present itself. Upon some of the amounts owing for materials we are paying a high rate of interest, and a considerable saving would be effected if we could arrange to clear off some of the floating liabilities by a loan for a fixed period at a moderate rate of interest. A first-class hydraulic property, with its canals and valuable plant, is a good security for capital, and I heard the other day of a hydraulic company which borrowed a considerable sum of money at 9 per cent. As the rate of interest on the Pacific Coast for loans on real estate and lands is about twice as high as it is in this country it says a good deal for the repute in which hydraulic companies are beginning to be held in California when they can borrow money at 9 per cent., and I am de-

The
CAMBRIAN
MINING COMPANY,
LIMITED,
Sold at
Swansea, April 9th,
116 Tons of
Copper Ore,
Which realized
£1,113 5s.
Average price,
£9 11s. 11d. per ton.
Hodgkinson & Co.,
9, Great Winchester St.,
London, E.C.,
Can now
Supply
Cambrian Shares
At £3 per Share.

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—S. Toy, April 10: In the 15 we have now cut into the lode 13 ft. There is no sign of the north wall as yet. The present forebrest is poor, and the ground very hard and spare for driving, on account of the lode being subject to many cavities, and discharging so much water, that there is scarcely any boring or blasting it, consequently, I have suspended cutting further through the lode, and set the men to drive east on the course of the lode, where I am hoping we shall soon meet with better ground and more lead.

ASHETON.—G. Rickards, April 10: The pitch over the 50, east of boundary shaft, is working at 65s. per ton for lead ore, and 10s. per ton for blende. No. 1 pitch over the 50, east of Mawr's, at 120s. per ton for lead ore and 10s. per ton for blende. No. 2 pitch over the 50, east of Mawr's, at 140s. per ton for lead ore and 10s. per ton for blende. No. 1 pitch below the 40, east of Brown's, at 60s. per ton for lead ore and 10s. for blende. No. 2 pitch below the 40, east of Brown's, at 70s. per ton for lead ore and 10s. for blende. No. 1 pitch over the 20, east of Mawr's, at 120s. per ton for lead ore. No. 2 pitch over the 20, east of Mawr's, on the north and south lode, at 127s. 6d. per ton for lead ore. The last two pitches have no tribute for blende. No. 1 pitch, south of Mawr's, at 120s. per ton for lead and 10s. per ton for blende.

BAMPELDE.—J. Juleff, April 9: I am pleased to inform you that the ends and stopes are looking very promising for producing fair quantities of copper ore, and the more I see of the mine strengthens my opinion that it will make an excellent property. At Crawthorne there is a very fine looking lode, and if opened on in the western hill I hope and believe it will quickly open out large quantities of manganese, which will, in my opinion, pay well for prosecuting with vigour. The 112 end, west of No. 4 shaft, continues to look very promising, and worth about 160. per fathom. The No. 1 stop in back of the 112, west of No. 4 shaft, is worth 80. per fathom. No. 2 stop in back of the 112, is worth 80. per fathom. In the 102 end, west of No. 4 shaft, the lode is small, and when the driving is resumed in this end I think it will quickly improve in size, and become productive for copper. When the end west of No. 4 shaft was last wrought it was worth 70. per fathom. I should say we have about 2000. worth of copper ore at surface.

BEDFORD UNITED.—R. Goldworthy, W. Phillips, April 11: In the 138 east we are driving by the side of the lode. The lode in the 115 east has fallen off a little in value, but we think it is only temporary; now worth 120. per fathom. The lode in the 103 east is worth 80. per fathom. There is no other change to notice.

BETTS.—Y. COED.—H. T. Haley, April 8: The rise in the back of the shallow adit is looking splendid, and worth 25 cwt. of lead ore per fathom. I think we shall hold to the shallow adit, when we shall have a nice piece of ore to draw, and a good lode to drive on in the adit. The end going off in the south adit, the shallow adit is a most promising one, and will certainly lead to ore. The deep adit is producing a little ore, but not to value. The 20 south branch is now worth 12 cwt. per fathom, and getting into better ground. I have been through the deep adit to-day, and several places in this level small shafts have been sunk, in which the lode is looking well, especially one about 30 fathoms in advance of the bottom end, and as this end is extended eastward we may expect a good improvement here. The north branch in the 20 is again improving, worth 25 cwt. of lead per fathom, and a very strong lode. The lode in the engine-shaft is now 3 ft. wide, composed of very nice blende, carbonate of lime blende, and a little mudi, with lead ore to the value of 30 cwt. per fathom; it has a nice look both under and over the lode, and frequently have nice strings of lead dropping into it, and it increases in size and value every fathom we sink in it. When we get deep enough to drive out levels east and west it will open out first rate ground for stoping. Looking at the mine throughout I must say that the prospects are most encouraging.

BLAEN CAELAN UNITED.—J. Pell, April 11: Everything at these mines remains satisfactory. The lead in the bottom of the winze sinking below the 20 is worth 60. per fathom; the ground being sinking is exposed to the surface. The engine shaft is going down very nicely, the ground being favourable for progress.

BLUE HILLS.—S. Bennetts, A. Gripe, April 6: The Pink lode in the 80, east from the engine-shaft, is opening out satisfactorily, and is at present worth 150. per fathom. The top lode, in the same level east, has somewhat improved, and is now just now from 120. to 150. per fathom. We now commence to open out west also on this lode. On the north lode the 30 east end seems gradually improving; the lode is now 1 ft. wide, worth 60. per fathom.

BODDLE.—H. Hottel, April 10: In the 60 south cross-cut our indications are very favourable. The cross-cut is much broken up and disturbed, and appearances indicate the approach to the main lode, which I am daily expecting to intersect. In the 45 fm. level winze, in bottom of this level, the lode is 3 ft. wide, of a very promising character, and is strongly mixed throughout with blende and lead ore; but owing to the air being bad in this level I have, in accordance with your instructions, suspended the sinking of this winze for the present, and put the men to open out one of the old shafts at surface, which lies east of the 45 fm. level end about 6 fms., and to sink the same on the course of the lode to meet the 45 end east. We have commenced here to-day, and have found the air to be much better, and the lode is 2 ft. wide, in weight, plainly showing that the former workers have had a run of ore here of great promise, as the pureness of the stuff plainly indicates. My object for sinking on the lode is twofold—first, we shall be proving the lode as going down; secondly, there is every probability of meeting with ore in sufficient quantities to pay for the sinking. The 45 end east is in a well defined lode, which is strongly mixed with blende. I am daily expecting to come into another run of ore, as indications at surface plainly show the existence of another run having gone down to the east of the present end. The stop in back of this level is turning out good lead and blende ore. I have no other change to report in the cross-cut north—ground much the same.

CLEMENTINA.—John Roberts, William Bennetts, April 10: We have put four of the men to open in the roof of the adit level on the east and west lode to the west of the main level. We are pleased to say that the lode has very much improved, and is worth 1 ton of lead to the fathom. We have 22 fms. of backs, all whole to surface.

CLOGAU.—W. B. Davis, March 30: At the beginning of the month we left the stop in the level on the branch lode, from which we obtained visible gold during the past month, as it is advisable not to hole through until we have tried the shoot on the floor of the level, and finished the driving west to the point of intersection with the second "chute" cut in the open workings above. By this means we save the necessity of unwatering and timbering the present working places. Six men were out to sink on the chute on the floor of the level. We found, after following it down for half a fathom, that the lode changed its character entirely, the visible gold suddenly cutting out, and although we tried the ground for another fathom in depth failed to meet with any indications to lead to the hope of again finding payable ground. We consequently stopped this stop, and continued to drive the level west. About a fathom from the former level the men have finished with good visible gold, but do not propose to touch until the men have finished their present contract.—No. 7: We have daily cut a little visible gold here, but so far not enough to cover working expenses. The ground has improved, and there is every indication that we are coming to a pocket.—Reduction: The Britten pans crushed 773 lbs. of ore, which yielded a bar of gold weighing 57 ozs.

CWYSTWIT.—April 10: During the past fortnight good progress has been made in driving Gill's upper level east on a large masterly lode, worth 1½ ton of lead ore per fathom. In the winze sinking on new lode below Mitchell's level, east of cross-cut, the ground is favourable for sinking, but no lead has yet been taken down (left standing to keep the water up). In Mitchell's cross-cut north we have cut through the lode discovered on the 8th inst., which has proved to be 18 inches wide, showing nice spots of lead, blende, and copper ore—a kindly-looking lode; the ground north of the lode is more favourable for driving, and good progress is being made. The stopes over Gill's upper level, on the new lode, is not looking quite so well, and the ground tight for stoping; the lode is 3 ft. wide, worth 1 ton of lead ore per fathom. The stopes over Mitchell's level west, on new lode, is worth 15 cwt. of lead ore per fathom. The lode in the stopes over Mitchell's, in the 12 on new lode, is worth 15 cwt. of lead ore per fathom, and still contains a little lead. The two stopes over and under Level Fawr, on the copper lode, are worth 12 cwt. of lead ore each per cubic fathom. The stopes in the bottom of the intermediate level, on the new lode, is worth 12 cwt. of lead ore per fathom. In the pitch in the back and bottom of the 15, on Kingside lode and branches, the lode is 12 ft. wide, worth 1½ ton of lead ore per fathom for the width of the lode. In the pitch over Level Fawr, on Kingside lode and branches, the men have cut north into some nice branches of lead ore, which appear to be running into whole ground, and we are of opinion that we shall open up some good tribute ground above and under this point. The pitch in the back of the middle level, over Gill's upper level, is too poor to work, and the men have taken another in the 15, east of Kingside lode and branches; the lode is wide, and worth 12 cwt. of lead ore per fathom. Since the recent change in the weather we have succeeded in opening the bank of our pond on the mountain, and took out the broken launder, and replaced it by a new one; the pond is now shut close, and we hope to get it filled by the time the dry season sets in. Our water-courses are again clear of frost and snow, and all our machinery in full working order. Samples of 36 tons of lead ore were sent off on the 2nd inst., for sale on the 19th.

DE BROKE.—J. Phillips, April 10: The lode in Wilson's shaft, sinking below the 45, is large and regular, with a little ore, but not enough to save for dressing. The ground in the 45 east is close grained and hard for progress. The lode is wide, and produces spots of lead ore. The lode in the 45 west has improved, and yields fine stones of lead ore. In the trial stopes in the 35 east, near the cauter, we are raising considerable quantities of lowish grade, but paying ore. In the trial drift east of stopes above the 25, the lode is improved, and produces good rocks of lead ore, and looks kindly. The stopes taken together are without any alteration to mention. Underground and surface work is going on steadily. Biddings for 20 tons of lead ore are due to-morrow, and we have commenced dressing for the next sampling.

D'ERESBY CONSOLS.—John Roberts, William Bennetts, April 10: The Gora heading is looking more kindly for making lead. The lode is 3 ft. wide, having two good walls, and a good matrix of spar.—Owen's Lode: This is letting out water freely, and we expect a good improvement shortly. We have ordered the rails, and shall put them in directly.

D'ERESBY MOUNTAIN.—John Roberts, William Bennetts, April 10: There is nothing new to report here this week. The lode in No. 3 is still small. The No. 4 holds its own as we have reported for some time past, worth 3 tons of lead to the fathom, and 4 tons of blende.—No. 5: We are making good progress in this level. The crusher is on the mine.

EAST CRAVEN MOOR.—D. Williams, April 11: The 42 west has been extended during the month 6 fms. 4 ft., and is now withing 30 fms. of the new shaft from the surface. The vein in the end is at present 2 ft. wide, and intermixed with good patches of lead ore. The 30 west has been extended 3 fms. west of new shaft from the surface. In the 55, west upon Hardgate's end vein, the latter is 3 ft. wide, and worth 10 cwt. of lead ore per fathom.

EAST DAKEN.—April 10: In the 80, east of cross-cut, the lode is 3 ft. wide, yielding saving work. In the same level on south branch west the lode is 4 ft. wide, yielding 15 cwt. of lead ore per fathom. In the 80, west of cross-cut, on south branch east, the lode is ½ yard wide, yielding 1 ton of lead ore per fathom. In the winze sinking under the 65 the lode is large, yielding occasional stones of ore. The stopes and pitches throughout the mine are without improvement to report. Our machinery is in good working order, the drawing and dressing being pushed forward as the weather permits, which has been very hindering the past fortnight.

EAST YAN.—W. Williams, April 11: Tempest shaft is down 2 fms. below the 55. The 55 cross-cut south has reached the hanging wall, which is well defined. We have cross-cut 50 ft. through ground producing lead more or less throughout,

and in some places saving work. The lode is well defined, and the ground is hard enough to produce lead in paying quantities. We have driven eastward upon the course of the lode 6 ft., and cut good spots of lead, especially upon the sole of the level. We have to-day commenced driving westward on the hanging or south side of the lode in ground intermixed throughout with spots of lead, blende, and spar, which in 2 or 3 fms. driving may show improved results. Taking into consideration the appearance and width of the lode in this cross-cut, I am looking forward to the next level (the 70 below adit, or 110 fms. from the surface) in hopes of being able to report that we have a mine. We hope to have the shaft down in four months to the 70. In the meantime it is very possible that the drivings east and west of the 55 cross-cut may discover an improved lode.

GAWTON COPPER.—G. Rowe, G. Rowe, jun., April 6: The lode in the 52, west of cross-cut, is carried 7 ft. wide, composed of capel and mudi, mixed with ore, altogether of a kindly appearance. The lode in the 95, east of cross-cut, is carried 10 ft. wide, producing mudi and ore to the value of 100. per fathom. The lode in the winze sinking below the 105 is worth 300. per fathom. The lode in the stopes at the same level is worth 250. per fathom. The drivage of the 111 east is progressing very satisfactorily on the flookan part of the lode. All other points are without change.

GLASGOW CARADON CONSOLS.—William Taylor, W. J. Taylor, April 1: Elliott's engine-shaft is down about 2 fathoms below the 90; we have set a bargain to sink 6 ft. more, put in bearers and cistern, and fix standing lift in the same—all this work will be got on with as fast as possible. In the 90 east the lode is worth 150. per fathom. In the 90 west the lode is worth 120. per fathom; the ground in both these ends is favourable for driving. In the 78 east the ground is still rather hard, but the lode is producing mudi and ore to the value of 100. per fathom. A few fathoms ahead of the 90 east, is worth 150. per fathom. This level west on the south lode is worth 120. per fathom. The midway east is producing a little ore, but not of much value yet. The stopes and pitches throughout the mine are still looking well, varying in value from 150. to 300. per fathom. We are getting on with preparing for the double skip-road in the new shaft. We can only be about this work when we are not drawing there; at the same time we are making the road to bring the ore from the new shaft to the dressing-floors. The quantity of ore for our next sale is computed 225 tons, which will be sold on the 18th inst.

GLASSLYN CONSOLS.—T. Jenkins, April 10: The situation in the cross-cut is looking very promising—nice clay-slats—and as we drive there is much water forcing out of the ground; it is strongly coloured, and impregnated with iron; in my opinion we are not far from the lode; I cannot say to a few fathoms, but think about 8 or 10 fms. The work at surface has not been sufficient for me to be certain as to the underlie of the lode, but from all appearance it will turn out one of the best in the neighbourhood.

GLENHOY.—R. Rowe, April 9: The cistern and bearers are fixed in the shaft, and the men are sending down the new rods; the pumps for the new plunger will follow, and everything is being done to forward work as fast as possible.

GOGINAN.—April 10: The lode in the pitch over the 130 fm. level, east and west of western shaft, is 6 ft. wide, and worth 12 cwt. of ore per fathom. In the pitch east and west of winze below the 120, 45 fms. west of Bryn Pica shaft, the lode yields ½ ton of ore per fathom. The lode in the three pitches over the 120 varies from 5 to 8 ft. wide, producing from 9 to 12 cwt. of ore per fathom. In the pitch over the 100 fm. level, 10 fms. west of western shaft, the lode will produce 11 cwt. of ore per fathom. In the pitch over the same level, 12 fms. west of western shaft, the south part of the lode is worth 9 cwt. of ore per fathom. The lode in the pitch over the 100 fm. level, 20 fms. west of Taylor's shaft, will produce ½ ton of ore per fathom. At surface all things are being pushed on vigorously, but the weather for the last few days has been very stormy and hindering for such work. Machinery is in good working order.

GREAT DYLLIFFE.—Evan Evans, April 10: The stopes over the 132 west is still looking poor, not worth more than 4 cwt. per fathom. The stopes over the 130 east is a little better, and is worth from 6 to 7 cwt. per fathom. The stopes over the 95 east is looking well, worth about 25 cwt. per fathom. The stopes No. 1 over the 95 is much the same as when last reported. The stopes No. 2 is at present not looking good, but we expect this to be better again soon; worth at present about 10 cwt. per fathom. At the 95 we are also driving east by four men, and we have good prospects for another stop here before long. The stripping in the 20 is looking very good to-day, and should this continue as we now see it, it will prove a very important thing, because the lode is untouched at this point up to surface, about 55 fms. in height. At the new lode we are raising ore by six men, and have very nice stuff coming from here; we shall dress it separately in about a week, when you shall know the result. The rise at the 105, east of Bradford shaft, we expect will be held through to the old workings in a day or two, when we can commence stoping here at once. Our stopes and pitches on the Llechwedd du lode are much the same as last week.

GREAT RETALLACK.—J. Harris, April 8: The lode in the 53, west of eastern cross-cut, continues to yield good blende, worth fully 3 tons per fathom. I think it is the same run of blende ground we missed in the 45, as it has all the same characteristics.

GREAT RETALLACK.—T. Harris, April 11: The lode in the 53, east of shaft, continues to produce fully 3 tons of blende per fathom; a very pretty lode. Other parts of the mine are looking much the same as when last reported.

GREAT WHEAL RODD.—T. Hosking, April 9: I am very pleased to report that the further good progress made during the past week. The lode in No. 1 shaft on Budge's lode continues to drain most rapidly, and we proceed with the drivage of the deep adit towards the lode; the same is now in 32 fms. from the brook, and is of a similar character, being composed of a beautiful blue and soft killas. We are now at a point where it gains back very fast, and the ground is becoming more settled. Additional hands are now employed to hasten on the work as speedily as possible, and in the course of another week we hope to be enabled to report that the lode has been reached.

HINGSTON DOWN CONSOLS.—T. Richards, April 11: Bailey's Shaft: In the 172 east the lode continues its strong and masterly size, but for the present does not contain so much ore, being now worth 4 tons, or 100. per fathom. The cutting of the ground for the skip-road is finished, and in a day or two more we shall have all the timbers fixed and the road complete to admit of drawing the stuff from the 172. The lode in the 160, west of Nicholls' winze, is large, and containing capel, quartz, mudi, and copper ore, to the value of about 60. per fathom. There is no material change in any other part of the mine.

KIT HILL TUNNEL.—H. Bennett, April 11: The following is the setting report:—The tunnel to drive north, by six men, at 44. 12s. 6d. per fathom. The end to drive west of the tunnel on the silver lode, by six men, at 21. 15s. per fathom. The lode in this end when last reported was about 2 ft. wide, composed of goosan, sulphur mudi, and silver ore, and presenting a splendid appearance. The lower adit to drive north, by two men, at 30s. per fathom. No change at this point since last report. The tunnel to drive south, by two men, at 21. 5s. per fm. There is but little change at this point, with the exception of an immense flow of water from the end.

LADYWELL.—A. Waters, April 11: The new shaft will be made good to adit level this week. The 20 above adit, going south of shaft, is opening out paying ground. The adit south is still in a small lode, but there are signs of being near the end of the twelfth; the winze below this level is suspended, and the men put to rise in the 16, where the lode is worth 20 cwt. per fathom; price for rising being 10s. per fathom, and 10s. per ton of dressed ore. I hope to hole the rise to winze in a day or two. The tribute pitches are yielding ore to pay the men at 60. per ton. Our sampling of 25 tons takes place this day week.

LIVINGSTONE CONSOLS.—W. Vivian, April 11: We are pushing on the 40, west of the north shaft. There is no change to notice in the lode since last week.

LLAN GAN.—W. Michell, April 10: Engine-shaft: We have cut through the lode in the north cross-cut; it is 2 fms. wide, and is producing good stones of lead ore, and promising for a further speedy improvement.—Old Engine-shaft: We are getting nice ore from the two pitches, and the men continue to get fair wages. Our machinery is still in good working order, and the dressing is kept on by tributers.

LLANRWST.—Robert Knapp, April 11: Edean's shaft is sunk 3 fms. under the 14. We have about 3 ft. more to sink before commencing to put in bearers and cistern and fixing the standing lift from the 14 to the adit. The cauter lode at the 14, west of the shaft, is improving getting under the ore ground going down from the level above. In the eastern end it is 3 ft. wide, and producing 2 tons of lead ore per fathom. We have not yet commenced stoping at this level. At the adit, east of Prospect shaft, the lode is 6 ft. wide, and producing 3 tons of lead ore per fathom. This end is 40 fathoms in advance of the one below. The stopes in the back of this level (seven in number), two men in each stop, are producing their usual quantities of ore.—Main Lode: In the 9, west of Diagonal shaft, the lode is 6 ft. wide, producing 1½ ton of lead ore per fm. In the winze sinking under the adit, east of the shaft, the lode is 4 ft. wide, producing 2 tons of ore per fathom. This winze is about 10 fathoms in advance of the 70, west of shaft, is 3 ft. wide, and worth 2 tons of ore per fathom. The lode in the 60, west of shaft, is 3 ft. wide, and worth 3 tons of ore per fathom. The lode in the winze in the bottom of this level is worth 5 tons of ore per fathom. This winze is about 7 fathoms in advance of the 70 end. The lode in the rise in the back of this level is worth 3 tons of ore per fathom. The lode in the 50, west of the shaft, is 3 ft. wide, and for the present rather disordered, and worth 2 tons of ore per fathom, and a little blende. No. 1 rise in the back of this level, east of shaft, is worth 4 tons of ore per fathom. No. 2 rise in the back of this level, west of shaft, is worth 6 tons of ore per fathom. We expect to sample on Tuesday next about 530 tons of copper ore.

MORFA DU.—T. Mitchell, April 4: We have put in two more sets of timber this week, and made the shaft secure to the bottom. The sinking is progressing favourably.

MONYDD GORDDU.—J. G. Green, April 11: I have nothing new to report this week. We are meeting with more ore as we advance in the 24 west, and I daily expect to cut into the rich lode seen going down in the winze. Surface water is very short, so that I have had great difficulty to complete the sampling. The mine also is full of stuff for the same reason.

NORTH LAXEY.—J. Bowden, April 9: In the 84 end the lode is increasing in size, now 15 in. wide, composed of rock, sugar spar, and lead, and have to be taken to the dressing-floors. We have sunk in several places in the bottom of the 73, and find that there is a very promising lode going down below the 84 end; we are now sinking 30 fms. below the 84 end, and there is a strong open lode going down, 12 ft. wide, composed of spar, and producing good stones of lead. The 110 rise is worth 10 cwt. of lead per fathom. The 60 stopes is worth about 10 cwt. per fathom.

PENHALL.—H. Nottingham, April 10: New Lode: The 33 driving shaft continues to be worth 1½ ton of lead and 1 ton of blende for the width of driving. We have neither of the walls with us at present, so we are turning to the foot-wall side, expecting the lode to make best on this side, and shall be more likely to cut down the water. The lode is now composed chiefly of carbonate of lime

hathom, and expect to cut the Well lode at this point during the current month. The adit end is set to drive west of the engine-shaft, by six men, at 2*s*. 6*d*. per fath. We have about 15 fms. more to drive to reach Hampton's shaft. The stope in the back of the 4*s*, east of the engine shaft, by four men, is yielding a little silver ore. No. 1 stope in the back of the 4*s*, east of Cook's shaft, is working by six men; the lode at this point has been very rich for silver during the past month, and is still looking well. No. 2 stope in the back of the 4*s*, east of Cook's shaft, working by six men, is yielding good silver ore. No. 3 stope in the back of the 4*s*, east of Cook's shaft, and west of James's winze, is producing rich stopes of silver ore. No. 4 stope in the back of the 4*s*, east of James's winze, working by six men, is yielding good work for silver. We have a rise in the back of the 4*s*, east of Cook's shaft, by six men, east of No. 4 stope, and are expecting every day to get rich silver ore. We are continuing to develop the property the prospects and value of the mine will be very considerably and permanently enhanced. We have to-day sent to London 4 tons 1 cwt. 30 lbs. of silver ore, producing 6210 ozs. of silver to the ton. We have another parcel of best silver ore, also a parcel of second—in all about 10 tons—which we hope to send to London the latter part of this week.

WHEEL UNY.—W. Rich, M. Rogers, April 8: The run of ground in King's shaft is made secure, and the hauling through the shaft is resumed. The back of the 60 feet is worth 6*d*. per fathom. The lode has split in the 140 east; we shall now have to drive the north stope. The 150, east of King's, is worth 8*d*. per fathom. The 150, west of incline, is worth 10*d*. per fathom. The lode in the 160 east is poor. The 160 west is worth 10*d*. per fathom. The lode has a kindly appearance in the bottom of Hind's engine shaft.

WATSON BROTHERS' MINING CIRCULAR.

Ten years ago the weekly information which had previously been published for a great number of years in *WATSON BROTHERS' Mining Circular* was transferred to the columns of the *Mining Journal*, with the following announcement; which is now reproduced in consequence of the numerous letters and enquiries handed to them of late in reply to one which appeared in the *Journal* on the Clementina Mine.

WATSON BROTHERS,
MINEOWNERS, STOCK AND SHARE DEALERS, &c.,
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. **WATSON BROTHERS** to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash or for the usual fortnightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charges for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in upon the Stock Exchange.

Having agency in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2*s*.

In the year 1843, when mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. **WATSON, F.G.S.**, author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes," (first series, 1862), "Cornish Notes," (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. **WATSON** was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. **WATSON BROTHERS** have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. **WATSON BROTHERS** they are enabled to give to the public, by this publication, their best services and advice to all connected with mines and mining.

Messrs. **WATSON BROTHERS** are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts; but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

SATURDAY, APRIL 6.—The demand to-day has been chiefly for shares in lead mines.—D'Eresby Mountain, Van, East Van, D'Eresby Consols, Leadhills, and Flanker Hills. D'Eresby Mountain, 8*s*. to 10*s*; Van, 2*s*. to 3*s*; East Van, 5*s*. 6*d*. to 6*s*; D'Eresby Consols, 1*s*. 1*d*. to 1*s*. 4*d*.; Leadhills, 3*s*. 6*d*. to 3*s*. 9*d*.; Flanker Hills, 1*s*. 6*d*. to 1*s*. 9*d*.; Roman Gravel, 8 to 8*s*; Rookehope Lead, 1*s*. 6*d*. to 2*s*. West Chiverton, 13 to 14; Carrn Brea, 4*s*. 4*d*. to 4*s*. 6*d*.; Dolcoath, 31 to 33; South Condurow, 10*s*. 11 to 11*s*.; Tincroft, 11 to 12; Grenville, 3 to 3*s*.; West Tolgas, 6*s*. to 10*s*.; Parys Mountain, 9*s*. to 11*s*.

MONDAY, APRIL 8.—Market for shares in lead mines firm. Tin shares inactive. Van, 2*s*. 2*d*. to 2*s*. 4*d*.; East Van, 5*s*. 6*d*. to 6*s*.; D'Eresby Mountain, 8*s*. to 10*s*.; West Chiverton, 13 to 14; D'Eresby Consols, 13 to 14; Leadhills, 3*s*. 6*d*. to 4*s*.; Tankerville, 3*s*. 6*d*. to 3*s*. 9*d*.; Roman Gravel, 8 to 8*s*.; Rookehope Lead, 1*s*. 6*d*. to 2*s*.; West Chiverton, 13 to 14; Carrn Brea, 4*s*. 4*d*. to 4*s*. 6*d*.; Dolcoath, 31 to 33; South Condurow, 10*s*. 11 to 11*s*.; Tincroft, 11 to 12; Grenville, 3*s*. 6*d*. to 3*s*. 9*d*.; Parys Mountain, 9*s*. to 11*s*.; Devon Great Consols, 2*s*. 4 to 3; Richmond, 9*s*. 10 to 10; Eberhardt, 5*s*. 6 to 6; Chontales, 8*s*. to 10*s*.; Flagstaff, 12*s*. to 1*s*.; New Quebrada, 1*s*. 4 to 1*s*.

TUESDAY, APRIL 9.—Market moderately active for East Van 6 to 6*s*.; Van 2*s*. 2*d*. to 2*s*. 4*d*.; D'Eresby Mountain, 8*s*. to 10*s*.; D'Eresby Consols, 13 to 14; Leadhills, 3*s*. 6*d*. to 4*s*.; Tankerville, 3*s*. 6*d*. to 4*s*. Other quotations are about the same as yesterday.

WEDNESDAY, APRIL 10.—Market for tin shares firmer. D'Eresby Mountain, Van, East Van, and D'Eresby Consols continue in demand. Carrn Brea, 4*s*. 4*d*. to 4*s*. 6*d*.; Dolcoath, 31 to 33; South Condurow, 10*s*. 11 to 11*s*.; Tincroft, 11 to 12; Wheal Agar, 3*s*. 6*d*. to 4*s*.; Grenville, 3*s*. 6*d*. to 3*s*. 9*d*.; Parys, 6 to 6*s*.; D'Eresby Mountain, 8 to 10*s*.; Van, 2*s*. 2*d*. to 2*s*. 4*d*.; East Van, 5 to 5*s*.; D'Eresby Consols, 13 to 14; Leadhills, 3 to 3*s*.; Roman Gravel, 8 to 8*s*.; Rookehope Lead, 1*s*. 6*d*. to 2*s*.; Tankerville, 3*s*. 6*d*. to 4*s*.; West Chiverton, 13 to 14; West Pateley Bridge, 1*s*. 3 to 1*s*. 4; North Lacey, 3*s*. to 3*s*. 6; Wheal Valley, 1*s*. 2 to 1*s*. 3; West Pateley Bridge, 1*s*. 3 to 1*s*. 4; West Tolgas, 6 to 6*s*.; Devon Great Consols, 2 to 3; Parys Mountain, 9*s*. to 11*s*.; Richmond, 9 to 9*s*.; Eberhardt, 5 to 5*s*.; Chontales, 8 to 8*s*.; New Quebrada, 1*s*. 4 to 1*s*.

THURSDAY, APRIL 11.—Market rather quiet to-day, the dealers being busy with the settlement, and prices are about the same as yesterday.

FRIDAY, APRIL 12.—Market very active for tin shares, and also for Van, East Van, D'Eresby Mountain, D'Eresby Consols, Tankerville, and Leadhills. Carrn Brea, 4*s*. 4*d*. to 4*s*. 6*d*.; South Condurow, 11 to 11*s*.; Grenville, 3*s*. 6*d*. to 4*s*.; Wheal Agar, 3*s*. 6*d*. to 4*s*.; Parys, 6 to 6*s*.; D'Eresby Mountain, 8 to 10*s*.; Van, 2*s*. 2*d*. to 2*s*. 4*d*.; East Van, 5 to 5*s*.; D'Eresby Consols, 13 to 14; Leadhills, 3 to 3*s*.; Roman Gravel, 8 to 8*s*.; Rookehope Lead, 1*s*. 6*d*. to 2*s*.; Tankerville, 3*s*. 6*d*. to 4*s*.; West Chiverton, 13 to 14; North Lacey, 3*s*. to 3*s*. 6; Wheal Valley, 1*s*. 2 to 1*s*. 3; West Pateley Bridge, 1*s*. 3 to 1*s*. 4; West Tolgas, 6 to 6*s*.; Devon Great Consols, 2 to 3; Parys Mountain, 9*s*. to 11*s*.; Richmond, 9 to 9*s*.; Eberhardt, 5 to 5*s*.; Chontales, 8 to 8*s*.; New Quebrada, 1*s*. 4 to 1*s*.

THE WEEK.

SATURDAY, APRIL 6.—Capt. Drake telegraphing from the Eberhardt Mine, reports that "the rise is still favourable," but that he wants 1800*l*. The share continues much neglected. A few purchasers were made of Van at 2*s*. and East Van at 5*s*.; Port Phillip, 10*s*. 11 to 11*s*.; for month end ending March 27 over 120 tons of gold were treated, resulting in a net profit of 64*l*.; Devon Gravel, 8 to 8*s*.; Roman Gravel, 8 to 8*s*.; Tankerville, 3*s*. 6*d*. to 4*s*.; Rookehope, 1*s*. 6*d*. to 2*s*.; West Chiverton, 13 to 14; Carrn Brea, 4*s*. 4*d*. to 4*s*. 6*d*.; Dolcoath, 31 to 33; South Condurow, 10*s*. 11 to 11*s*.; Tincroft, 11 to 12; Grenville, 3 to 3*s*.; West

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to 5½; we understand a telegram has been received that good results are being obtained at the dressing-floors.

The Market for Mine Shares on the Stock Exchange has been very unsettled, and a very limited amount of business has been done; but the improved feeling as to the future continues, and promoters of all classes are very active in their preparations for the anticipated coming prosperity. Capitalists may congratulate themselves upon the fact that their interests are about to be looked after by several financial philanthropists, who intend to devote themselves exclusively to the expenditure of such funds as may be entrusted to them; and it seems that the capitalists will be able to take their choice of English, French, and American guides—or, rather, that the three nationalities are to be the result of their investments in profits which British capitalists have received as the result of their investments in American mining enterprise not affording sufficient inducements for further trials in the same direction, some Pacific financial philanthropists propose to bring about the same new and improved process, for the development of which the services of English and European continental agents and bankers are to be enlisted. Past experience has shown that even needy Americans have been able to secure the heavy "loading" (for their own pocket's sake) of Anglo-American under-capitalists. What would be the result of replacing the needy promoter by an organization of millionaires who can utilise the capitalists at discretion by fixing their own terms and working the market in order to suit their own book? This is a question which the capitalists themselves will have to answer. The second place of financial philanthropy, however, is one which is really calculated to confer benefit upon English, or at least Welsh, lead mining. It seems that French capitalists have formed an idea that the mining engineers entrusted with the management of Welsh mines are generally incompetent—of course, everyone is aware of the vast superiority of French miners as compared with English or German miners—and they, therefore, propose to introduce French capital to work Welsh mines, and will confer great benefit on Wales, &c., by enterprise is highly commendable, and will confer great benefit on Wales, &c., by increasing the capital employed in mining. The movement will also be advantageous in stimulating competition, for it cannot reasonably be supposed that even the most thoughtful English capitalists would entrust funds to French directors who would be jealous of the profits which will pass into the hands of such enterprising Frenchmen; but the great advantage to us will be that Englishmen will be compelled to exert themselves to show that they can manage mines as well as economically as the Frenchmen to use French capital, and the Englishmen competition, leaving the Frenchmen to use French capital, and the Englishmen to use English, and no one will have cause for regret.

The Clogau (Welsh Gold) Mine report states that about a fathom from the former "find" good visible gold has been met with. In the No. 7 section a little visible gold has been cut daily, but so far not enough to cover working expenses; recently, however, the ground has improved, and there is every indication that a pocket of gold is in the neighbourhood. During the month the Britten pans crushed 773 lbs. of ore, which yielded a bar of gold weighing 57 ozs.

Scottish Australian, 1½ to 1½. Preference, ¾ to 1; the directors have advised from Sydney to Feb. 18, stating that the sales of coal for January amounted to 14,457 tons. Yorke Peninsula, ¾ to 1; Preference, ¾ to 1; the directors have advised from the Kurilla Mine to Feb. 18. They are hopeful that the Kurilla lode is not far from them in the 45, west of Hall's. The advice concludes: Total number of men on tribute on Morphet's and Kurilla lode, 18, at an average of 7s. 11. On Returns: Stock on Jan. 31, 360 tons of ore of 17 per cent., and 61 tons of waste ore of 5 per cent., together of the estimated value of (say) 3300. net. 360 tons are now being despatched for shipment to England per Torrens. Port Phillip and Colonial, ¾ to ¾; the profits for the four weeks ending Jan. 30 was £108. 8d., making the available balance 3028s. 15s. 4d. The amount divided between the two companies was 1000s., the Port Phillip Company's proportion being 650s. The remittance was 600s. A telegram from Melbourne, dated April 5, states that the March profit was 541s., and the remittance 400s.

St. John del Rey, 305 to 315; the telegram from Morro Velho, dated Rio de Janeiro, April 9, states that the produce for March was 41,500 oits., of the value of 16,081s., the ley of the ore being 6.3 oits. per ton, or 7.8 oits. per ton by the old measurement. All is going well. Don Pedro North del Rey, ¾ to ¾; the last telegram received states that the produce for March was 4500 oits. Capt. Vivian reports that he is exploring the cross-cut a little below Alice's West, No. 8 old shaft, north ground, and may have not yet got to the north side of the lode, or a tattoo met with. Up to this point the lode continues to be equally productive as when last reported on, and no doubt will be found quite as good on the other side of the excavation referred to; this is the second thing of the sort met with since this cross cut has been commenced, and no doubt this ground was considered to have been thoroughly explored; but, strange to state, as far as they have extended operations here not a single stone has been opened out between the two which they are now working eastward or down hill, where the lode is large, and producing excellent quality ore. All other points are looking much the same as when last advised. Frontino and Alice, 1½ to 2½; the directors have received advice under date Feb. 13, in which Mr. White states that the mines were looking as well as ever. The produce for the month was 859 ½ ozs. of gold dust, from 520 tons of mineral, averaging 1 oz. 6 dwts. per ton; 257 ½ ozs. of gold dust purchased from miners on tribute under arrangement mentioned in the previous monthly report; total value, 2194s. 10s. 8d. at Bolivia and expenses in London and Medellin, 1198s. 4s. 8d.; paid the cost dust purchased, 544s. 4s. 6d. = 1740s. 9s. 2d., leaving a profit of 453s. 10s. 10d. In addition to the monthly cost of 1198s. 4s. 8d., the sum of 114s. 13s. 4d. has been expended on capital account. The smaller profit is attributed to the non-arrival of the machinery. During the month of January only 33 tons were treated from the lode, which realised 193 ozs. of gold, or an average of nearly 6 ozs. per ton, and from the Palmichala 59 tons produced 173 ozs., or an average of nearly 2 ozs. per ton. At Antioquia the loss was 58s. 8s. 5d.

Last Chance, ¾ to 1; in advice recently received from New York the Chairman of the company states that the agreement between the company and Mr. Davis and the trust deed on behalf of the debenture holders have been signed, and will be immediately registered in Utah. He further states that the necessary machinery has been purchased and shipped to the mines, and that he was at once proceeding there to erect the same, and resume mining operations—crushing, dressing, &c., the ore.

Richmond, 9½ to 10; the usual weekly telegram from the mine at Eureka states that the week's run was \$95,000, from 1120 tons of ore, and the week's produce of the refinery was \$55,000. The manager's report, which is of an encouraging character, will be found in another column. Eberhardt and Aurora, 5½ to 6½; the whole face of the tunnel is, according to reports from what the Eureka Sentinel considers authentic sources, in ore, a change in the formation having just taken place. It is added, that "the ore in the cross-cut is also improving, both in quality and quantity. The strike in the face of the tunnel is a most important one, demonstrating the existence of ore bodies at a depth of several hundred feet, and giving further towards solving the problem of the permanence of the once famous White Pine Mines. The residents of Hamilton and all who have an interest in Old Pogo, are to be congratulated on the outlook. This favourable state of affairs does not, however, appear to be confirmed by the last telegram, which merely says—"Tunnel in 2856 feet; rise still favourable; mine some improvement; want 18000." Colorado United, 1½ to 1½; the superintendent's letter, dated March 14, reports that on the previous morning they cut into a fine lode of silver ore, 33 tons were treated from the lode, and the contents of the lode they gave 355 ozs. of silver to the ton. The lode is looking splendid throughout. The lower stops of the Brown is opening up well.

Shareholders in poor base bullion-producing American mines should in their calculations remember the vast reduction that has taken place in the price of lead. The Union Consolidated Company is stated to have suffered a loss of \$60,000, and at Darwin a furnace producing 10 tons of bullion per day loses just \$350—in other words, a ton of bullion formerly realised \$25 over and above transportation it now loses \$10 more than the lead is worth to market it (but, of course, no useful conclusion can be drawn from this statement unless the exact produce of the ore for lead, and the contents of the lode, be known, since it costs 90 per cent. in San Francisco to refine the bullion, or separate the lead and silver; it is not surprising that some enterprises belonging to this class of industry are suffering in the States.

Haltfall, 5 to 5½; there is nothing new to report in these mines—the points of operation continue the same as when reported upon last week. A telegram received this morning from the dressing-floors states that good results are being obtained from the dressing. The Market for Hydraulic or Gold Washing shares has been more active and some amount of business reported. Blue Tent, 3 to 3½; the report of the annual meeting will be found in another column. The Chairman announced a further clean-up of \$10,000, making a total this year of \$32,200. The shareholders may be congratulated upon possessing a valuable property with such large reserves of enormous gravel. Cedar Creek, ¾ to ¾; the agent announces a clean-up at the Baker claim, with a return of \$5000, which is regarded as being very good. Washing continues on this and the Baker claim. Birdseye Creek, ¾ to 1; a telegram received during the week announces a clean-up, with a profit of \$2000. This may be regarded as satisfactory, considering the delays caused by the heavy rains. The manager's report of the last clean-up at Birdseye will be found in another column. We are told that a similar result was obtained at the commencement of last season's washing, though it was afterwards discovered that more than the quantity of gold obtained was lying in the bed-rock cuts and sluices. It is considered probable that it will prove the same this season.

Lead Mines have been fairly active, and transactions more numerous. Van, 23 to 25; the sinking of Seaham's shaft is steadily progressing. The 105 west is being driven upon a strong westerly

lode; the end is worth 4 tons of lead ore per cubic fathom, and improving. Other points of the mine unchanged, and all operations going on satisfactorily. Grosvenor, 3½ to 4½; everything progressing as usual, and the prospect very opening out. Wye Valley, 2 to 2½; the mine below the 22 is still improving, and the 46 east has changed for the better. All other operations going on satisfactorily. West Wye Valley, 3½ to 4; the bottom level (44 fms.) is opening up profitably, and all other points giving satisfaction. The parcel of lead sold on April 6—80 tons—realised 10s. 6d. per ton. A further parcel is being got ready. Caron, 2½ to 2½; the mine continues to make good progress, and the bottom level is steadily improving. Red Rock, 2 to 2½; a fresh discovery has been made, good ore having been cut into in the 10, west of the new shaft. This is an important part of the mine, and adds greatly to its value. All other portions of the mine continue to look well, and produce plenty of ore. St. Harmon, 2½ to 3½; the cross-cut in the bottom level west is now driven into the lode 12 ft., and the prospects are promising. The lode produces both lead and copper, and it is expected that some large deposits will be met with when the driving on the course of the lode is resumed as soon as the cross-cut is fairly through the lode, which is described as large and powerful, and contains all the favourable characteristics of the most productive lodes of the district. The cross-cut towards the south lode is now close to the point of intersection, and the ground is steadily becoming congenial for lead. All other points going on well; a sampling of ore will shortly be made. South Crosscut, 3½ to 4; all going on well at this mine, and a great deal of lead is being raised. West Gogian, ½ to ¾; a strong feed of water has been cut in the bottom level east, similar to what was cut some months ago, and discoveries are daily expected.

Pateley Bridge, 3½ to 4; the 30 east, on Rake vein, is worth about 3½ tons lead ore per fathom. The 30 west, on same vein, is worth 1 ton, and improving, the end letting out more water, a feature that encourages the agent to expect a further improvement shortly. There are 25 tons of pig lead ready for sale. West Pateley, 2 to 2½; the Craven Cross vein, at a depth of about 60 fms., continues to open out a course of ore worth 1 ton of lead ore per fathom; all other points progressing satisfactorily, and lead dressing actively proceeding. Mawson, 60 to 65; the level driving towards Wendley Hill is about entering a fresh run of ore, and is looking promising. The back of the same level is yielding well, and all other points of interest looking very favourable. Hartington Moor, 1½ to 2; the new Discovery shaft is now down 16 fms. in promising ground, having passed through numerous runs of ore, which are about to be driven upon, and which are expected to prove productive; the deposits are very wide and extensive, and cheap and easy to work, and profits are expected to result. On Monday the company obtained an additional grant of 1699 yards of ground containing these runs of ore without any further outlay of capital, the only consideration being the presentation of a dish of ore, raised from the land in question, to the barometer, or representative of the freeholder, and this ancient custom was duly observed on the occasion of taking formal possession. This fresh grant is considered to be of much value to the company, and will enable extensive operations to be carried on.

Subjoined are the closing quotations:—Asheton, 1 to 1½; Carn Brea, 45 to 47½; Court Grange, 1½ to 1½; Devon Great Consols, 2½ to 3; Dolcoath, 32 to 34; East Caradon, ¾ to ¾; East Van, 6 to 6½; Glenroy, ¾ to 1; Glyn, ¾ to ¾; Great Laxey, 18 to 20; Hingston Down Consols, ¾ to ¾; Leadhills, 3½ to 4; Marke Valley (call paid), ¾ to ¾; Parys Mountain, 8s. 4d. to 10s.; Pateley Bridge, 3 to 3½; Penrith, 3s. 6d. to 5s.; Roman Gravel, 8 to 8½; Rookhope, ¾ to 1; Tankerville, 3½ to 4½; Tincroft, 11 to 12; Tyn-y-Fron, 13½ to 15; Van, 23 to 25; West Asheton, ¾ to 1; West Basset, ¾ to 1; West Chiverton, 11 to 13; West Pateley, 2 to 2½; West Tankerville, ¾ to ¾; Wheal Grenville, 3½ to 4; Almaden and Tinto, ¾ to ¾; Argentine, ¾ to 1; Birdseye Creek, ¾ to 1½; Blue Tent, 3 to 3½; Cape Copper, 29 to 31; Cedar Creek, ¾ to ¾; Chontales, ¾ to ¾; Colorado Terrible, 1½ to 2; Don Pedro, 10s. to 12s.; Eberhardt and Aurora, 6 to 6½; Exchequer, 1s. to 3s.; Flagstaff, ¾ to ¾; Frontino and Bolivia, 1½ to 2½; Hualfali, 5 to 5½; Javali, ¾ to ¾; Kapanga, ¾ to ¾; Last Chance, ¾ to ¾; New Quebrada, 1½ to 1½; Oregan Preference, 4 to 4½; Pastora, ¾ to ¾; Plumas Eureka, 2½ to 3½; Port Phillip, 7-16ths to 9-16ths; Richmond Consolidated, 9½ to 10; St. John del Rey, 305 to 315; Sierra Buttes, ¾ to ¾; South Aurora, 8s. to 5s.; Teoma, 2-16ths to 3-16ths; United Mexican, 2 to 2½.

COLLIERIES.—Very little business has been transacted in these shares, and consequently there are scarcely any changes in prices to record. The quiet but continuous increase in coal exports, however, must tend to improve the position of all collieries which can be worked economically, and the prices of shares in such will be favourably affected. A similar effect must follow the growth of the iron and steel trades of the country, which are, of course, very considerable consumers of fuel. In some districts the demand for these metals is larger than it has ever been, and though prices continue low they are firm and tending upwards, and so soon as the railway companies begin to issue the orders for rails which they have so long kept back, and which must come into the market before long, the expansion of the iron and steel producing industries must be sudden and enormous. We are not, therefore, amongst those "croakers" who lament the "loss of our trade." The trade is not lost to this country. Other nations have suffered as much as, or more than, we have, and the reaction which is now happily beginning to show itself here cannot be found abroad. The demand for iron and steel in South Wales is decidedly improving, and more particularly for the best brands. Considerable shipments have been made to Belgium and South America, while enquiry for coal for shipment has been particularly brisk. In fact, general trade in South Wales is very much better, and a good season is expected. The Ynysyryn Company, which we mentioned last week—will, therefore, have a good start, and as it is in a position to raise a large quantity of best coal at once, and can make the best quality of iron and steel at its works, there is no doubt that the profits will be very considerable. The former company paid at one time as much as 50 per cent. dividends on its capital of 100,000s., whereas the present company's capital is only 60,000s., and the management will be conducted in a far more economical manner. On a very low estimate, and without including profits which can be derived from the manufacture of steel, the probable clear returns are put at 14 per cent., and we should think that this may easily be realised, even in the present state of trade. Chapel House reports continue favourable. The raisings of coal are well maintained, and every ton is as usual sold at once at good prices. The second large new engine is in course of erection, and it was expected that it would be at work early in May. A slight flaw in one of the working parts has, however, fortunately been discovered before the engine was completed, and this will cause some little delay in getting it to work. Altam shares are down to 4, 4½. There are, however, few shares offering. The progress at the colliery is satisfactory, and the works are being conducted economically. Llay Hall are quiet. A fair profit is being made at the colliery, and the coal continues to open out well, the main seam averaging from 8 to 10 ft. in thickness. Cardiff and Swansea, ¾ to 1. New Sharlston, 3½ to 4½. Newport Abercrom, 4 to 4½. Thorp's Gawber, 2½ to 2½.

At the Swansea Ticketing, on Tuesday, 3407 tons of copper ore were sold, realising 17,799s. 19s. 0d. The particulars of the sale were—Average standard for 9 per cent. produce, 79s. 13s. 0d.; average produce, 9½; average price per ton, 5s. 4s. 6d.; quantity of fine copper, 323 tons 13½ cwt. The following are the particulars of the two last sales:—

| Date. | Tons. | Standard. | Produce. | Per ton. | Per unit. | Ore copper. |
|----------------|-------|-----------|----------|----------|-----------|--------------------|
| March 19 | 3479 | 282 | 3 5 | 8 11-16 | 24 18 11 | 11s. 4½d. £56 19 0 |
| April 9 | 3407 | 279 | 13 0 | 9½ | 5 4 6 | 11 0 55 0 |

Compared with the last sale, the decline has been in the standard 2s. 10s. 5d., and in the price per ton of ore about 4s. 9d. The Betts Cove ore gave an average produce of 6 1-16, and sold at 10s. 4½d. per unit; Seville, produce, 5½; per unit, 9s. 1½d.; Aljustrel, produce, 4½; per unit, 9s. 11½d.; Tan-y-Bwch, produce, 14½; per unit, 11s. 4d.; Cambrian, produce, 16½; per unit, 11s. 7½d.; Moonta, produce, 25 1-16; per unit, 12s. There will be no sale on April 23.

GREAT LAXEY.—The directors have declared a dividend for the quarter of 8s. per share, free of income tax, payable on the 23d inst. A petition for the winding-up of the Dynevor, Dyffryn, and Neath Abbey United Collieries Company is to be heard on May 3.

WEST TANKERVILLE.—The lode in the 86 south has improved 1½ ton of lead ore per fathom. The 75 is improving, and the three stops in this level are worth 2½ tons per fathom. The two stops in the 63 are worth 1 ton and 1½ ton per fathom, and the stoep in the rise 12 cwt.

PANDORA.—The 33, on new lode, is worth 1½ ton of lead and 1 ton of blende per fathom, without seeing either wall yet. The stoeps in the 23 are worth 35 cwt. of lead and 2 tons of blende per fathom. A winze below the 23, on Goddard's lode, is worth 2 tons of lead and 1 ton of blende per fathom. The stoep in the 6 is worth 1 ton of lead and about some of blende per fathom. This mine has already sold lead to the amount of 9422s., blende for 1894s.—together, 11,316s., and with an advance on the present depressed prices, it would soon be in the Dividend List. Its success also tends materially to add confidence in the value of the D'Eresby Mountain Mine in the same district.

PATELEY BRIDGE.—The Rake vein in the 30 east continues to open out a valuable course of ore, the present end being worth nearly 4 tons of lead ore per fathom; and in the same level west it continues worth 1 ton of lead ore per fathom. This level having drained the water from the No. 1 winze in the 20 west, sinking will be resumed next week upon a lode worth 2 tons of lead ore per fathom; while the indications justify the manager expecting something of further importance at this the deepest point westward. The stoeps and metal pitches throughout the mine are turning out profitable quantities of lead ore. There are 25 tons of pig-lead ready for sale.

WEST PATELEY (Lead).—This week's report announces that the lode in No. 2 shaft is 2 ft. wide, producing good stones of ore; the same lode in the 20 ft. level east is producing saving work for dressing of good quality. In the same level west the lode has been heaved south by a cross vein. The stoeps are yielding the usual quantities of lead ore. The Craven Cross vein at the bottom of the mine (60 fms. from surface) is 3 ft. wide, yielding 1 ton of lead ore per fathom. On the surface the machinery is in good order, and grating and dressing is carried on as fast as possible.

With this week's Journal a SUPPLEMENTAL SHEET is given, which contains: Original Correspondence: British Commerce in the Superior Metals for the First Quarter of 1878; Colliery Explosions; the London Coal Supply (W. J. Thompson); the Tin Plate Trade; Rock Drills; Air Compressors and Rock Drills (J. G. Granston); A Perfect Reservoir (R. Symons); the Tharsis Sulphur and Copper Company; the New Quebrada Company (W. W. Bird); Don Pedro North del Rey Gold Mining Company (J. S. Houston); Mineral Resources of Ireland—County Clare (J. Ryan); an Examination into the Position and Prospects of Certain Mines—No. II.—Great Laxey (W. Gabbott); the Mining Districts of Halkyn and Mold; Kingston Consols Mine (E. A. Saunders); Kingston Consols Mine (W. Hancock); Lead Mines in the North—Pateley Bridge, West Pateley Bridge, &c.; Cwm Avon Works; the Mineral-Producing Granite of Cornwall (C. Bowden); West Wheal Seton; Foreign Indebtedness to the British Public (R. Trautmann); Public Companies, and Liquidation; "A Singular Character"; Devon Great Consols; the Five-week Month (D. P. Alford); the Effects of Mining Depression, Clifford Amalgamated Mines (R. Symons); Il-quoted Services (R. Symons); St. Breward Great Onslow Consols (T. Dunn); Great Wheal Rodd—Meetings of Javali, Sierra Buttes, London and California, Cathedral, Wheal Eliza, Rossa Grande, Combmartin Companies, &c.

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Notices to Correspondents.

* * Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

SULPHURIC ACID.—I shall be much obliged if some of your practical chemical readers will explain, through the Journal, the easiest and best mode of manufacturing 1 ton of sulphuric acid of the highest strength; also where the necessary apparatus can be obtained. We have a quantity of metals combined with 30 per cent. of sulphur, also nitrate of soda and waste steam.—**SULPHUR; Iquique, Peru.**

RICHMOND MINING COMPANY.—I am a holder of Richmond mining shares, and have just heard with great disquietude that a claim for \$2,000,000, or even more, has been brought by the Eureka Mining Company against the Richmond for ore taken out of the disputed ground before the late lawsuit. Can any reader tell me if this is true? for I see no mention of it in your valued Journal for the past week, nor have the directors told us anything about it. But, perhaps, they do not know, or the whole story may be untrue.—**A POOR WIDOW.**

Received.—"A Blower" ("Mining Engineer" (Miners): There is no necessity to do so—"M. N." (Leeds): Write to the office—"Shareholder" (Wheat Newton)—"Shareholder" (Thornhill Reef)—"Reader" (Goginan): We fear it is true—"Shareholder" (Wheat Kiddy)—"Old Subscriber" (Bristol): We will endeavour to obtain the particulars—"R. W. B."—"Amateur" (Norwich)—"Y. Z."—"Shareholder" (Eberhardt and Aurora): Write to the office—"Miner" (Cannock Chase): The letter is far too personal for publication—"Shareholder" (South Condurrow)—"A. F." (Goginan)—"W. T." (Ballydeob)—"A. D.A." (Pisa)—"W. K." (Pittsburgh)—"M. F. Dormer" (Mining Investments): Next week—The article on Mineral Oil Motors shall appear next week.

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, APRIL 13, 1878.

OUR EXPORTS OF COAL AND IRON.

The trade and navigation returns just issued by the Board of Trade for the month of March and the three months ending March 31, all things considered, are by no means unsatisfactory. So far as coal, iron, steel, and machinery are concerned, there has been a considerable increase in the weights, although not in the detailed value. Taking the whole of our exports from the three months of the present year we find that they amounted to 47,076,628, against 47,260,755, in 1877, or a decline of 184,127. But the main falling off has been in soft goods, for there was a decrease in the value of cotton pieces alone of 865,681, on the quarter, whilst machinery in particular looks very well. The quantity of coal sent out of the country during the last three months was 3,199,735 tons, against 2,950,636 tons in the same period of 1877. France continues to be our best customer, having increased its tonnage 706,487 tons last year to 807,236 tons. Italy stands next with 230,791 tons, and 226,052 tons during the two quarters. Sweden and Norway for the respective quarters took 108,598 and 142,223 tons; Egypt, 108,559 and 139,329 tons; Brazil, 71,526 and 101,500 tons. Our own Government has sent a very large quantity of steam coal to Malta for the use of our navy during the last three months, the total being 116,392 tons, against 77,778 tons in 1877. There was a falling off in the exports to Germany of about 30,000 tons of coal for the last quarter, but this is what must be expected, seeing how active the German colliery owners have become, and the large field they are now busily engaged in developing. British India appears also to be looking more to her own vast resources, for there has been a considerable falling off in the tonnage sent there of late, and so there has been from unfortunate Turkey, but for a different reason. Russia, too, has evidently found considerable difficulty in obtaining the supplies from this country she formerly did, for we find that for the three months ending March of the last three years the exports were respectively 82,363, 68,332, and 49,861 tons. But whilst the tonnage we have sent out of the country has been so far satisfactory during 1878, so far as it has been in excess of the corresponding months of the two previous years, the reverse is the case with respect to the values. For March, 1877, the average price of the coal exported was 10s. 3d. per ton, and for the same month of 1878 it was only 9s. 9d. per ton. But if we take the three months of last year the declared value was 10s. 6d. per ton, against 9s. 9d. per ton for the past quarter. These prices show how closely our colliery owners have worked of late to maintain their position in the foreign markets, for they state that to do so they have been obliged to sell without profit, and in not a few instances at a positive loss.

Bessemer rails have for a considerable time past been most extensively exported, and the trade has been very well maintained, for our manufacturers have shown that they are now in a position to meet their foreign competitors, even in their own markets, despite the low wages and light taxes of which they have the advantage; but this state of things, it should be stated, to a marked extent is the result of the low price of coal and iron, and the reduced rate of wages that is now paid. In hardware and cutlery the quantity exported for the first quarter of 1877 was of the value of 473,793, and for that of the present year 784,365, showing an increase of more than 5 per cent., showing that this important branch of trade is improving. Machinery and mill work shows to still greater advantage, the value sent away during the year having been 1,589,210, against 1,451,852, or more than 9 per cent. in favour of 1878. Our exports of wrought and unwrought iron for the last quarter amounted to 4,197,468, and for the same period of 1877 it was 4,152,091. As regards the charge the iron sent out last year up to the end of the first quarter was fully 2s. 6d. per ton higher than during the last three months. So far, then, as relates to coal and the other industries most intimately connected with it we think we may say that the year has opened out as fairly as could be expected for them, and that our future, despite the war cloud hanging over us, appears brighter than it was in the early part of the year. Masters and workmen acting in concert together will contribute more than anything else towards maintaining the position we have in most foreign markets for our best-known staple productions, of which coal and iron form the principal elements.

COAL IN THE UNITED STATES.

The mere possession of abundant natural resources is not sufficient to make a country rich and prosperous. We see this in the case of Turkey, we see this in the case of Spain, and we see this in the case of Virginia. We might, probably, point out a similar result in other parts of the world, but we do not care to extend our observations any further, but prefer to confine our review to Virginia. The Appalachian chain, or Cumberland coal fields, contains the largest carboniferous deposits on the American continent. It is estimated that West Virginia alone contains upwards of 16,000 square miles of coal lands, principally bituminous, cannel, and gas coal. Besides the coal of West Virginia, there are immense deposits east of the dividing line between the two States of Virginia and West Virginia, lying in the eastern slopes of the Shenandoah Mountain, and in both sides of the ridges lying east of this mountain to the western border of the great valley of Virginia. Eastward from the Kentucky State line, and along the line of the Chesapeake and Ohio Railroad to the Blue Ridge in the valley of Virginia, there are immense beds of superior coking coal, cannel, and other gas coal, as well as anthracite. The Chesapeake and Ohio Railroad, going west, enters the first outcrop of the bituminous coal field, near the junction of New River and Meadow Creek, a few miles west of Hinton, and it skirts the New and Kanawha valleys. As feeders to this road some 400 miles of branch track could be made at moderate cost up the Gawley and the Elk rivers. The slopes and side drainage of this field are favourable for coal inclines, so that the cost of mining and delivery would be low. Bituminous coal beds are also reached soon after crossing the Allegheny Mountains, going west along the waters of the Cheat and Greenbrier rivers in Preston, Tucker, Randolph, Pocahontas, Greenbrier, and other counties drained by the New and Gauley rivers. This coal reaches

the eastern seaboard via the Baltimore and Ohio Railroad; as much as 70,000 tons are delivered annually by this route, the coal being held in high esteem in Eastern American cities on account of its gas-producing qualities. A new railroad has been laid out and chartered to extend from Fredericksburg (on tide water) to the coal fields of the north-east counties of West Virginia via Harrisburg, at which point a connection will be effected with the Valley branch of the Baltimore and Ohio Railroad, east and south to Staunton, then connecting with the Chesapeake and Ohio Railroad. The road, when completed, will cheapen the transportation of Virginian coal east, south, and west. A large number of mines are now being vigorously worked along the line of the Chesapeake and Ohio Railroad, in the New River region. The production is delivered over inclines, many of which are long and steep to the bottoms of the hills, when it is coked and shipped in large quantities, east and west.

Yet as a whole Virginia is decidedly not a prosperous State. She has, indeed, publicly confessed her poverty, and pleaded that poverty as a reason for not meeting with punctuality the interest accruing upon her State bonds. Allusion has been made more than once in this article to the Chesapeake and Ohio Railroad, but from a financial point of view this line is as great a failure as the State of Virginia. Some allowance ought, no doubt, to be made for the fact that Virginia suffered terribly from the Civil War which was waged upon her soil from 1861 to 1865; but this fratricidal contest was brought to a close in April, 1865, and in the 13 long years which have since elapsed the Virginians ought to have recovered from their grievous trouble. But unhappily the "first families of Virginia" are proverbial for their pride, their poverty—at any rate, their genteel poverty—and their indolence. They pay little heed to the laws of credit, and the consequence is that their coal wealth remains comparatively neglected, and that they simply vegetate drearily and listlessly as a community.

MINERAL PHOSPHATES.

The value of phosphate as a fertiliser being so well known, it would seem there is not that attention paid to it which might be expected from its value. There are companies formed for the working of almost every description of minerals, but we are not aware of any engaged in the production of our phosphates, neither are we acquainted with the extent of our deposits of it. That it must be a profitable source of investment may be inferred from the fact that its average value is about 2s. 8s. per ton. Phosphate of lime, it may be said, is a mixed material. To two atoms of phosphorus there are five atoms of oxygen, constituting phosphoric acid, but is neutralised with three atoms of lime. Pure phosphate of lime is almost unknown, although some of that obtained in Spain gives as much as 90 per cent. of that important fertiliser. The phosphate of lime in England is found in the chalk marl, which is an argillaceous limestone underlying the true chalk, and is traceable under the entire chalk range from Lynn to the south coast of Dorsetshire, and is associated with the same deposit throughout the entire centre of the Wealden country. In Cambridgeshire and Hertfordshire the bed has been worked for the nodules of phosphate, which are of organic origin. In Wiltshire and Dorsetshire the marls are extensively developed, in some instances being nearly 100 ft. in thickness, with organic remains resembling the fauna of the upper greensand. The actual area of the phosphates has not been determined, but we know that the chalk formation in England extends from Flamborough Head through Norfolk, Cambridgeshire, Bedfordshire, and Wiltshire to St. Alban's Head in Dorset. Small quantities of phosphate of lime are raised in Montgomeryshire and Flintshire, in North Wales, and coprolites and phosphatic nodules at Royston, Hitchin, Whaddon, Daxford, &c., the average output of the latter being about 250,000 tons a year. The preparation of mineral phosphates for manure is the same as that adopted with bones. The former is generally broken into pieces, and ground between heavy iron rollers into a fine powder, and is then made into superphosphate. In doing so sulphuric acid is used, when the chalk is converted into gypsum. In connection with phosphate of lime in different proportions are the phosphates of iron and aluminium. The phosphate of aluminium is an important article, and has been largely imported from abroad for conversion into alum and crude phosphoric acid, and also into phosphate of soda and alumina. As to our known home supply, it is said that its value was first discovered by the late Dr. HENSLAW, Professor of Botany at Cambridge, who, on some fossils being shown to him by a farmer, saw at once that they were phosphate of lime, and remarked to the man—"You have found a treasure; not a gold mine, indeed, but a food mine. This is bone earth, which we are at our wits' end to get for our grain and pulse, which we are importing as expensive bones all the way from Buenos Ayres. Only find enough of it, and you will immensely increase the food supply of England." Such is the value of the phosphates that, in addition to our own supplies, we have imported extensively from Spain, Norway, America, the West Indies, &c. The mineral phosphate can be deprived of all its impurities, and so handed over to our farmers. For this purpose muriatic acid is employed. The mineral, being reduced to powder, is treated with a certain amount of acid in a vat, the mixture and the solution being forwarded by a jet of steam from the bottom. By this means the soluble matter is separated from the insoluble, the former containing the whole of the phosphates, and the other the useless and worthless refuse.

Phosphates are raised in some parts of France and on the Continent, but not to the extent they might be were greater attention paid to their development. In the Ardennes, the Meuse, and in the Pas-de-Calais, as in England, the fertilising mineral is found in connection with the cretaceous beds, and in Hainault is found in nodules lying unconformably on the upper of those rocks. The Craie-brune-de-Cicely, which lies below the Malogne conglomerate, is also phosphatic, but is not worked, although those who are acquainted with the locality consider that it could be profitably raised. The deposits are in the upper chalk, consisting of brownish nodules cemented in a calcareous paste with fragments of indurated chalk and fossils. As a fertiliser phosphate is now in great request, the supply being far below the demand. That it has all properties attributed cannot be doubted, for we know from those who have devoted marked attention to the subject that phosphoric acid, as well as ammonia and salts of potash, are brought down with river sediment, derived from sewage and other impurities, hence the fertility of deltas and alluvial soils. Seeing that the present consumption of mineral phosphates could almost be doubled in England were there a sufficiency at hand, it is plain that there is a large field open for profitable investment in an article that is of the greatest importance to our agriculturists. It would, therefore, be of national benefit were the extent of the deposits even approximately made known to us. Capitalists even at the present time invest in collieries, although they are not paying, and even search for coal in new districts, when they know that more is being raised than is required. On the other hand, there is a new field to which very little attention has been devoted, but which offers every inducement to those who seek for what evidently could not fail to be a highly remunerative investment, and one that would be of the greatest benefit to the country at large by greatly increasing our food supply at a moderate cost.

DEVELOPMENT OF THE CUMBERLAND COAL FIELDS.—It is interesting to find that even at a time when competition between Welsh and Scotch coalmasters has almost driven Cumberland colliery proprietors out of the Irish market that a spirit of development is shown, not only in enlarging the collieries but in utilising the output in new directions. Coke ovens are at work at Flimby manufacturing coke from native coal, and this industry is making such rapid strides that it is confidently expected in a short time a sufficient tonnage of coke will be made in Cumberland to enable makers of iron to secure their supplies from the locality of their works, instead of, as at present, from Northumberland and Durham. The capitalists of the district look forward hopefully to this new branch of industry, and to the beneficial effect it will have on the trade of the district. The St. Helens Colliery Company, Cumberland, have sunk through a large bed of water, carrying gravel in their No. 2 pit, and it is expected arrangements for working will be

speedily made for both pits. The yard seam has been touched by the Wythmoor Colliery Company, and is intended by them to sink to what is known as the four-foot seam. There are indications of large beds of coal in Cumberland which have not yet been worked, and it seems probable that their development will not be retarded by the want of enterprise.

We are asked to state that in the advertisement of Carn Martha Copper Mine, which appeared in the Journal in July and August last year, Mr. Charles Bawden inserted the names of Messrs. Tweedy, Williams, and Co., of Redruth, and their agents Messrs. Glyn, Mills, and Co., of London, as bankers of the company, without their consent or knowledge.

THE AMERICAN SLATE TRADE.—Mr. G. A. Gotwald (Pen Argyle, Northampton, Pennsylvania, Feb. 25) writes—It may not be without interest to your readers to know something of the extent and value of the roofing and school slate exported from this vicinity within the past year. I, therefore, send you the following summary of facts:—Upwards of 20 years ago the vast and rich slate beds at this place first attracted the attention of practical slaters from Cornwall, England. Messrs. Henry Jory, John L. Jory, and Robert Kellow, the partners in the present company of Henry Jory and Co., were among the pioneers in this enterprise; they, together with others, secured large tracts of slate lands by purchase and on long lease. Several quarries were opened, and the slate was recognised as equal to the best Welsh and English slate in texture, colour, permanency of colour, firmness, and freedom from mineral admixtures. The home demand consumed the entire product of the quarries, which each year became greater until the financial crash of 1873 seriously affected the trade. During all these years there was no slate exported from here; but, on the contrary, considerable amounts had been imported into the country. In October, 1876, Mr. W. P. Davis and Mr. John Belamy, two English gentlemen connected with the English slate trade, visited this place, and finding that in addition to essentials of quality this slate could be manufactured so much cheaper than in Europe, they contracted with all the proprietors for the entire crop of all the quarries, regardless of amount, and by December, 1876, they already were sending cargoes to England and Germany. Within one year fully 100,000 squares of slate were exported from the quarries within a radius of 2½ miles of this place; the slate sold at the quarries for \$3 per square. The past year's history must not be judged as a speculative venture, for there are now on hand orders for all the slate that can be produced during the next 12 months. Another fact, the demand for these slates is not limited to the older European nations, but large quantities go direct to Central and South America, New Zealand, Australia, Japan, China, and other countries. These few facts show that a permanent, growing, and profitable addition has been made within the past year to the foreign commerce of America. Already proposals are at hand from Liverpool capitalists to run a line of vessels specially as slate carriers; this is rendered necessary because of the present high price for freight, and the frequent changes in freight rates. Besides, at least one of these Liverpool gentlemen is one of a company now negotiating to purchase the largest quarry at this place. This new company, besides possessing ample means, also largely controls the European slate trade. The year opens favourably for a wide expansion of the foreign slate trade from Pen Argyle as compared with last year. Additional and improved machinery and nearly double the former number of hands will be employed.

GEOLOGICAL SCIENCE, AND THE CITY GUILDS.—The honorary freedom and livery of the Turners' Company was conferred on Prof. PRESTWICH, of Oxford, on Thursday, April 4, and we had intended to publish this week a full report of the proceedings, which were of an unusually interesting character, but pressure on our space prevents us from doing so.

BRISTOL MINING SCHOOL.—The lecture on Monday next will be on "Coal Cleaning," by Mr. M. Geoffrey Morgans, mining engineer, Bristol. Mr. Johnson's lecture, originally fixed for this day, will be delivered next month.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

April 11.—A rather better demand is this week being experienced at the collieries where furnace coal is mined, due to a little more activity in the making of raw iron. In the forge coal department, too, a somewhat better state of things exists. The lowness of price is the great drawback in this department, and it is the more serious because the colliers will not do anything either in the shape of accepting lower wages or working longer hours to help their masters to bear up against adverse circumstances. Judging from the tendency which exists to increase the make, there is an improvement in the pig-iron trade. Of the firms who are about to blow in a furnace, Messrs. Addenbrooke, of Rough Hay, Darlaston, are conspicuous. The finished iron trade has not fallen off upon the week, and prospects are considered to be a little brighter than they were a few weeks ago. Mr. S. Loveridge, the owner of the Shrubbery Ironworks, Wolverhampton, started yesterday some eight puddling furnaces, with the view of working up certain of the castings on the premises.

At the Quarterly Meeting in Wolverhampton yesterday no alteration was made in the prices of either pig or finished iron or of coal. To-day (Thursday) the Birmingham meeting confirmed the Wolverhampton prices. There was firmness as to all high class iron, and a few sales were booked for small lots. Common iron was easier. Under 6½ was taken for common bars, and under 7½ for nail-sheets. Pig sold tamely. A meeting of tin-plate makers from Wales and elsewhere, representing 100 furnaces, appointed a committee to arrange for reducing the output all round.

Among the novelties exhibited in the Hall was a model of Tinsley patent hot-air chamber for utilising dry oxide cinder bottoms in lieu of sand bottoms for mill furnaces. The invention consists of a lateral casing of cast-iron plates, lined inside with fire-bricks. The casing effectually protects the exit hole for the cinders from cold air, and a door in the front, raised and lowered at the workman's will, admits a tap wagon, which passes under the interior furnace flow in the hot-air chamber, and remains until filled with the flowing cinder as it exudes. The tap wagon is then withdrawn, and replaced by another in less than half a minute. The cinder being the most valuable "fettling" known for puddling furnaces, the importance of the invention will be obvious. A working specimen was also exhibited of the hand-power rock-drill sinking machine, for drilling blast-holes of any required depth and diameter, at any angle in every description of rock, by hand-power. It is comprised simply of an air-tight cylinder, in which a piston is set in motion by two lifting cams above. These parts are worked by two men at hand-wheels, giving from 150 to 180 heavy blows per minute—least four to one as compared with ordinary hand-labour. Messrs. Cooper and Smith, of the Clarence Works, Morville-street, showed samples and models of their patent non-conducting composition for covering boilers and steam-pipes, and their soluble tannate of soda for removing incrustation in steam-boilers; and Mr. J. S. Mowbray, of West Bromwich, exemplified the uses of the electric press for multiplying autograph letters, circulars, &c.

The Chillington Iron Company (Limited) has held its annual meeting in Wolverhampton, when the report (a summary of which has previously appeared), showing a loss on the year of 9700, was presented. The Chairman (Mr. G. J. Barker) explained that the actual loss on the year's operations was about 7000. The output had been 19,000 tons, which was only about half the capacity of the works. The average price that the company had obtained for its manufacture during the 12 months had been 8s. 18s. 1d. per ton—18s. 7d. per ton less than in 1876. The making of edge tool steel by the company had resulted in a profit. A leading shareholder advised the closing of the works altogether rather than the company should go on making losses. After considerable discussion, the report was adopted, and the retiring directors re-elected.

It is not a favourable indication that in various districts of Staffordshire certain of the families of colliers, of ironworkers, and of other operatives engaged in the metalliferous industries are receiving weekly relief at the hands of public committees appointed

administer funds raised for the purpose. In this connection the works of Wolverhampton and Bilston stand conspicuous. In and around the latter town the drowning out of collieries by the rising of the underground flood is a serious matter for the colliers, a large number of whom are totally unemployed.

On the local stock exchanges the dullness in coal and iron proper continues. Since my last report the only transaction of importance has been one in the shares of the Cannock and Huntington Colliery, which have sold at 9 dis.

Mr. C. W. Wilkinson, the agent of the Harecastle and Woodstock Colliery, has been fined 5*l.* and costs for not causing to be entered the name, age, and residence of Albert Kirkham, a boy under 16 years of age employed in the mine. The defence made was that the defendant having appointed a manager had taken reasonable means to carry out the Act, and was therefore exonerated. It was also shown that it was the duty of the overman to keep the register, and the overman said he thought the boy Kirkham was entered, and could not account for the omission. Both defences failed.

Five of the seven pits which were sealed down at the Apedale Colliery have been re-opened by consent of the Government Inspector, but care will be exercised not to open any of the connections with the Burley pit.

The iron and coal trades of North Staffordshire are not altered upon the week, but ironmakers and colliery owners are expecting orders as the result of the quarterly meeting in Birmingham.

REPORT FROM CORNWALL.

April 11.—There is then after all a lower deep beneath that lowest deep which we have been all so fondly and earnestly imagining had been reached. Former prices were bad enough, but never in the whole recorded statistical history of the tin trade has there been so low a figure touched as that to which the smelters put down the standard on Saturday. It is utterly unprecedented, and almost, we might say, utterly unapproached. However, it does not in the least strike our confidence in the future, nor in the belief so often expressed that the present depression has far more of an accidental than of a permanent character about it. We do not, it is true, regard it as at all probable that the present generation will see anything like the high prices which ruled a few years since. They are gone, and we can afford to part with them with some equanimity, for with them went also a good deal of wasteful expenditure. The improvements which have been effected in the operations of tin mining since then, under the pressure of stern necessity, and those which are in progress, are such that better results could now be obtained with a price 20*l.* a ton less—and in some cases even 30*l.*—than then. This is a most important element in consideration for the future that is too often either overlooked altogether, or not assigned its due importance. It is all the more needful that its due weight should be insisted upon in times of saddening depression like the present.

In some of the larger mines there has been a reduction of wages, especially to the surface hands. This must be regretted, but it cannot be regarded as other than unavoidable. The pressure is most severe, and is certain to be shared more or less by all parties concerned. Better, of course, even poor wages than none at all, and the patience of the adventurers has in many cases been so continuous and exemplary that we cannot wonder they should try all they could to lighten the burden. But there is one thing especially to be regretted and, indeed, to be condemned, and that is that sundry attempts should be making to revive the five-week month. That caused a good deal of trouble in its time. It died very hard, and it was a very difficult job to get it decently buried. The time has gone by for any attempts at its resurrection, even if they were really desirable, to be successful now. If there must be reductions let them be made fairly and openly, and not under this thinly veiled guise, which introduces a new and most objectionable element of feeling into the already quite black enough outlook of many a working miner and surface worker. The five-week month was an anomaly, and its revival would be a still greater one.

The date for the opening of the Polytechnic Exhibition at Falmouth has been fixed for the same convenient period as last year. The Exhibition itself will open on Tuesday, August 27, the judging taking place on the previous day. This gives as much time as possible to the exhibitors to get their exhibits in order. Only it must be borne in mind that the rules as to the reception of articles by the time appointed are now strictly adhered to.

Dr. Oxland, F.C.S., well-known throughout Cornwall and Devon, and especially in connection with the notable calciner—Oxland and Hocking's—has just been elected president of the Plymouth Institution, the leading scientific society of Plymouth and its vicinity, and one of the oldest and most important in the West of England. He has for some years been the curator of geology and mineralogy therein.

A remarkable illustration of the vitality of Cornish mining is afforded this week by Wheal Pevor, which has at various times excited so much interest and attention. The profit made in the last few months has been sufficient not only to pay off the debit balance, but to allow of the declaration of a dividend. More tin has been and is being discovered by far than is being taken away, and thus Wheal Pevor enters the Dividend List when the standards are at the lowest point on record. So much for a good mine and perseverance, and so much for the resources of Cornwall.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

April 11.—Fortunately it is a very rare occurrence in South Wales that disturbances take place such as have recently occurred at the collieries belonging to the Landore (Siemens) Steel Company at Cockett, near Swansea. In consequence of a dispute the men engaged at these collieries left their work, and it was found necessary to replace them by other men. The fresh employees have been intimidated and assaulted by the old hands, and in consequence a large staff of police have been engaged on the spot, and have succeeded in keeping the peace. Several cases, however, have come before the Swansea magistrates. A collier named John Matthews has been fined for assaulting Mr. Charles Henderson, resident manager of the Weigfach and Worcester Collieries, and has been fined 1*l.* and costs. Three other men have been fined in connection with assaults committed.

The last scene in the Tynwydd drama has at length been played, and the curtain dropped. At the Glamorgan Assizes Mr. John Thomas, manager of the Tynwydd Colliery, has been re-indicted on a charge of manslaughter in causing by his neglect the deaths of certain persons by the flooding of the colliery in the month of April last. On the part of the prosecution it was alleged on the day of the accident a certain "fault" had been passed, and precautions not adopted to deal with this. Testimony was given by the prosecution, but all agreed that Mr. Thomas had shown gallantry, determination, and anxiety to rescue the entombed men. Witnesses for the defence were called, who testified to the character, care, and skill always displayed by Mr. Thomas. The charge of the judge's (Mr. Justice Mellor) summing-up was generally to be in favour of the defendant, and he closed the way in which the prosecution had been conducted on the part of the Treasury, and the jury acquitted the defendant. The result will be hailed with satisfaction by the many who know Mr. Thomas, and who have sympathised with him under his misadventures.

The Victoria Coal and Iron Company has been ordered by Vice-Chancellor Bacon to be wound up, on a creditor's petition. The voluntary winding up of the Great Western Colliery Company has continued. The Swansea Tramway Company have received the sanction of the Board of Trade authorising them to open the Morriston line, and a favourable resolution from the Town Council have been accorded, the cars will at once commence to run. A dividend at the rate of 5 per cent. per annum has been declared for the year by the Vale of Towry Railway Company.

The staple trades of the district remain in about the same condition. It is apparent that reductions must take place in the wages of the men employed at the iron and steel works. Prices are low,

and masters have necessarily to decrease the cost of production as much as possible. One way of doing this is to reduce wages, and notices to terminate contracts have already been given at two or three of the large works, obviously with this object in view. The men at Landore Steelworks have already accepted a reduction, and it does not seem there is any idea now of closing the works, which was at first thought likely. The demand for steel rails is only moderately good, but there appears to be a fair demand springing up for best descriptions of steel. Iron rails are in poor request; and as for bars, they are chiefly absorbed in local requirements. For the foreign markets there is a dull enquiry. Clearances of iron during the week include a large parcel to Peru, as well as shipments to Sweden and Spain. The tin-plate trade is materially unchanged. There is about the usual amount of work in hand, but prices are low and fluctuating. The coal trade has shown rather less activity during the week, and there is apparently not quite so much doing at the collieries. The demand for steam qualities is moderately good, but prices are not quite so firm, and have not changed for the better. In Monmouthshire at two or three of the local collieries disputes have occurred, and in consequence the pits are idle, and house coals are in by no means good demand, and the patent fuel department is characterised by little animation.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

April 11.—Little or no change has taken place in the state of trade in Derbyshire since last notice. At the collieries the men are still working short time, and a considerable number are under notice to leave, which simply means a reduction of wages so as to equalise them throughout the whole of the county. The moderation of most of the employers, in only requiring a concession to the extent of 5 per cent., has been recognised by the men, so that they have not acted as formerly and struck, but wisely made the best of what could not be avoided. As a rule, they are now working not more than four days, and there does not appear to be any sign of an improvement taking place, but rather the contrary, for the fine weather must inevitably affect the consumption of house coal in particular. More than ordinary interest is now centred in the trade with London from Derbyshire and Yorkshire owing to the position of the two leading railway companies—the Midland and Great Northern—who enjoy the monopoly of the traffic of those counties, and who have striven, and with some success, in keeping the Great Eastern from getting into the Yorkshire coal field, seeing that it would lead to a reduction of the rates.

TRADE OF THE TYNE AND WEAR.

April 10.—Although the depression which has so long been experienced in connection with the Coal and Iron and most other trades has not passed away, there is considerable activity to be noticed in the shipping trade on the rivers; the import trade is increasing, and large deliveries have been made of late of timber from Sweden and the Baltic. There is also a good demand for Spanish iron ores and lead, and also for Esparto for paper-making. The export trade is also pretty brisk, and there has been a good demand during the week for steamers and sailing ships, and freights are improving. A very dull trade, however, is doing with the East and with Germany. The Coal Trade in Northumberland is still the worst in the district, and it would appear that apart from the depression in trade the markets throughout the world are very much overstocked with steam coal. It is evident that too many pits have been opened and too much of this coal thrown into the market. The pits in the steam coal district are badly employed, and the men are turning their attention to emigration; this movement has, indeed, been going on for a long period, but increased attention has been given to it of late, and clubs have been commenced in some localities in order to assist in this object. In Durham the works are certainly, on the whole, better employed than in Northumberland, yet there are many complaints of dullness. In house coal there was a spurt of short duration, which appears to have subsided. Gas coal works are best employed, some of them being engaged full time, but the demand for coke at present is very moderate, and coalworks in Durham are still being closed. The Tremdon Colliery has been stopped again, and also the Threlkington Colliery. In the west district one of the pits of Mr. J. Bowes, the Depton Colliery, has been stopped. The adjourned enquiry into the cause of the explosion at Whealy Hill Colliery was held on Thursday, and from the evidence given it appears that two shots had been fired and the explosion occurred immediately afterwards; it is, therefore, probable that the gas had been fired by the shots, as safety-lamps were used by the men, and the man who had charge of the shot firing appears to have failed in detecting the presence of gas. Two men lost their lives by this explosion, and several others were more or less injured. After a good deal of evidence had been adduced the jury returned the following verdict:—"We agree that the two men came to their deaths by an explosion of gas in the main coal seams, but there is not sufficient evidence to show where the gas came from." This case shows that even when safety-lamps are used and shot firing is allowed there is great danger of explosions, and the greatest care ought to be taken by those entrusted with this very onerous duty. The question has often been discussed as to what class of men should be entrusted with the duty. The question, however, is a very difficult one, and it is likely that the use of safety-lamps and shot firing will occupy the attention of the Legislature shortly.

That remarkable undertaking, Whitburn new winning, is likely to be completed in a satisfactory manner. The Belgian system of boring through water-bearing strata has now been in operation some time, and although many difficulties have been met with good progress has been made lately. A bore 5 ft. in diameter has been put down in the centre of the shaft, and this has been carried down below the water-bearing strata into the shale. It is expected that this will be the limit of the bore, and that it will not be necessary to carry it further. The great task, however, is to be accomplished of making a larger bore upwards of 14 ft. in diameter, and this operation is now in progress. When this is completed to the same depth as the 5-ft. bore the cast iron tubing is to be inserted. This tubing is 12 ft. in diameter inside; it is cast as a ring the full size, the circle inside the metallic ring will, of course, form the shaft when completed. Those rings, at least many of them, have been cast at the Elswick Ironworks, and their weight is from 6 to 8 tons each. Those rings will be screwed together and lowered down the shaft, and when this is completed only the water inside this tubing will be required to be pumped out. All this is expected to be accomplished in about six months from the present time.

A general meeting of the North of England Institute of Mining and Mechanical Engineers will be held on Saturday, when a number of new members stand for election, including one American gentleman. The following papers will be read:—"Some Statistics of the Coal Fields of the North of France," being a translation from the French of M. Vuillemin, by Mr. T. W. Bunning; "On the Present Condition of Mining in some of the Principal Coal-Producing Districts of the Continent," by Mr. M. T. Lindsey Galloway. Mr. G. A. Labour will exhibit a new form of clinometer.

The Iron Trade continues extremely quiet. The Quarterly Meeting was held at Middlesbrough on Tuesday, and there was little doing. Prices do not show much alteration. Makers are, however, very firm in keeping up to the quotations. With few exceptions these rates are firmly adhered to—No. 1, 43*s.* 6*d.*; No. 3, 40*s.*; No. 4, 39*s.* Although less iron has been made stocks are increasing, and makers' stocks at the end of March were 237,295 tons, the total stock being 343,749 tons. The shipments last month were large. The furnaces in blast have been reduced to 96, 17 of these being engaged on hematite, &c. The fear of war still has a bad effect on the manufactured iron trade. The plate trade is somewhat quieter. Prices remain 6*l.* 5*s.* to 6*l.* 7*s.* 6*d.* There is no change in the bar trade. The decision on the wages question is expected to be given in about a week by Mr. D. Dale, the arbitrator. The masters seek a reduction of from 10 to 17 per cent. in wages. There were some exhibits in the hall of the Exchange. Mr. R. O. Heslop, of Newcastle-on-Tyne, exhibited Cockburn's patent iron tubular barrows for pig metal, slag, scrap, or hot ashes, the peculiarity of which is that the frame

of the barrow, which also forms the handles) consists of a strong tube bent to shape required; great strength and durability are thus obtained. The same exhibitor, as representative of Craig and Donald, Johnstone, showed a large photograph of a powerful scrap-cutting machine, equal to cutting a section of 4-in. square iron. It is specially designed for plate scrap, having a gap of 18 in., with steelings 2' 4" long, and 2½ in. thick. The slide having a lift of 7 in., admits taking in such special scrap as boiler ends, bridge ends, or the heaviest class of rails, tyres, or puddled bars. Accompanying this were two photographs of a very heavy plate-shearing machine, with shears 12 ft. long, and capable of shearing at one cut a plate 10 ft. long by 1½ in. thick. This tool is driven by an engine placed on the top, so as to admit a clear way through the machine for long plates which can be passed between the cheeks of the machine. Mr. Heslop also exhibited specimens of Knight's sheet-iron, 37 wire gauge, which attracted considerable attention by their most perfect finish and extreme thinness. Much interest was attached to the improved locomotive coupling (Harrison's). The coupling apparatus is moved by the engineman's foot, and it is a clever and valuable invention. Wrought steel nails made by Jones Brothers and Co., Ayrton Nail Works, Middlesbrough, and also some cut nails, were shown by the same firm. Young, Dance, and Co., Newcastle, showed specimens of fire-bricks and pipes.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

April 10.—The attention of sanitary reformers is being increasingly directed to the condition of the populous mining towns and villages of North Wales. The Medical Inspector of Health for Anglesey says of Amlwch—"The want of a local authority is much felt. The water supply, except from badly-constructed wells, is quite inadequate, especially in summer, and the character of the water as shown by analysis is highly polluted. The drainage and privy accommodations are very defective." Then Trefriw, the home of many of the miners on the mountains with the modern name D'Eresby, is to be thoroughly drained and supplied with pure water. A complaint has recently been made in the Welsh newspapers of the disorderly conduct of the Cornish miners who have been brought over to Llanrwst. The Cornishmen reply by saying that nearly all of them are members of Christian societies, and the charge is a false one. The low price of lead checks mining adventures in the Principality, and reduces the dividends of good paying mines seriously. Thus at the Van Mines the decrease in the value of the lead lessened the sum available for dividend by 14,000*l.*, and the dividend of the Roman Gravel was reduced to a minimum. "Still hope springs eternal in the (mining) human breast," and it is marvellous the premium even now set upon the shares of non-dividend mines in North Wales and Cardigan. Might I suggest that "Caractacus" should add to his pleasant topographical description of the Montgomeryshire and Cardiganshire mines a few more stratigraphical and mineralogical features, such as the nature of the strata passed through, the width and character of the lodes in each, their earthy and metallic mineral contents, together with the arrangement of these. Such particulars would give distinctness and scientific value to his otherwise interesting letters. A step in this direction was made last week by your correspondent "Explor" in his account of the Flat Measure of Denbigh and Flint. A further description of the upper and lower flats, with the thickness and character of the strata between, would be of interest to many readers of the Journal.

The shipping of the Merionethshire slates at Portmadoc has revived, but the Carnarvonshire quarryowners are taking advantage of the lull to try for a reduction of 10 per cent. in the men's wages. It is doubtful, unless trade gets worse, whether they will be able to carry their point. A gold mine of Merioneth is to be wound-up. The Clogau holds on its way, and it would be satisfactory if with careful mining and good appliances some of the lodes north of the Barmouth estuary could be systematically and successfully worked. Many foreign quartz lodes do not contain a higher percentage of gold than some of these.

In his speech at the meeting of the Institution of Civil Engineers Mr. Gladstone, in referring to the attempts now being made to construct a tunnel between England and France, referred to the proposed tunnel under the Mersey, and the advantages which its construction and a railway in connection with it would confer upon Liverpool, Birkenhead, and the mineral industries of North Wales. The tunnel and the railway are among the useful works of the future.

Mr. Matthew Francis, manager of the Wern Colliery, Bagillt, was fined 5*l.* and costs at Holywell last week for not seeing that the firemen "before the commencement of each shift left in each working place, and as near the face as practicable, some well-known mark of safety or dangers, as the case may be, as evidence of his having examined the working place." Mr. Francis said he had delegated this duty to others, for whose neglect he had to suffer; the foreman was also fined. A sale which had been announced of the plant of the Brynkinnall Colliery, near Chirk, has been withdrawn. I am sorry, nevertheless, to see that a petition is presented for the winding up of the concern. The colliery has recently had two new shafts put down, and a siding constructed to the Great Western Railway, so that it seems a pity that as soon as the colliery has got into good working order it should get into legal troubles. The ironworks have a very deserted look, the output of the Frwdd Works, near Wrexham, being 3000 tons for the last quarter—only one-tenth of their capabilities.

The action brought by the county surveyor of Montgomeryshire against Mr. Savin for the purpose of preventing the passage of the traction engines over a county bridge at Llangynog has failed. The trial came off at the Chester Assizes last week. The judge refused to grant an injunction, and a juror was withdrawn.

REPORT FROM THE FOREST OF DEAN.

April 11.—The sale of Parkend Tin-plate Works, which was considered as effected at the date of our last report, did not turn out to be so, notwithstanding that there seemed no reason to doubt the reliability of the source of our information. It appears that the vendee at the last moment, upon considering the railway expenses of traffic to and from his colliery between Hawke and Parkend, found that they would constitute a serious item, sufficient in a series of years to result in a sum that would pay for the erection of tin-plate works at or near the colliery referred to. And this consideration led Mr. Chivers to hesitate completing the purchase. The matter, however, is not as yet (though so reported by some) finally abandoned, though it is impossible to say at present how the negotiations will finally terminate—whether in a sale or not. Should the vendor make a liberal concession as to the price, it is quite possible that the sale may be effected after all, but possibly a pause of some length may intervene. But for the present, at least the hopes of the famishing workpeople in and around Parkend are disappointed, which, of course, is a matter of regret.

The coal trade, although it varies somewhat, remains in a very unsatisfactory state, and the consequence is that the colliers are only upon part time, with the exception perhaps of one or two pits, which, on the whole, furnish more regular employment. At three out of five of the principal pits on the eastern side of the Forest the men are now working at a reduction of 5 per cent. on their wages, and this reduction applies to some of the principal iron mines, the iron trade being still in a very sluggish state, with little or no prospect of early improvement. The Lydbrook Works are reported of less favourably than a short time since, but trade is so feeble that nothing very definite can be predicted with much certainty, the commercial barometer rising and falling within the limit of a few degrees almost continually. The Forest Vale Ironworks, however, are an exception to this statement, as since the transatlantic order was proposed they have been kept going pretty well, as small orders have followed each other in pretty good succession. Now the firm has received an order for 100 tons for screws. It would, however, be much more satisfactory to the firm in this district if a formal agreement were entered into for a definite time, instead of piece-meal fashion as at present.

Unionism is at present at a low ebb here, very few members at present belonging to the Union, and the agent is about to be dispensed with. The men will never forget his leading them into the strike by telling them that the Amalgamated Miners' Association had plenty of shot in the locker, when at the same time it was insolvent! Some retain their confidence, but the great majority lost faith in their leaders, and the men have never since then been at one with the Union. Still, it is scarcely likely that unionism will become defunct with the dismissal of the agent, notwithstanding that prophecies have already appeared in print to that effect. Many of the colliers and iron miners have lost faith in unionism itself, no doubt, but more have lost faith in the agent, on the ground that they have too often been led into error by him. And it is certain that he cannot grasp the relative and equitable bearing of capital and labour, and therefore his counsel and advice have often been wide of the just mark and medium. The men's eyes, as a rule, are even now only partly opened, as many still think that wages ought to be ruled irrespective of profits on trade, which of course is in opposition to common sense.

The Forest district is very extensive and alarming, and is becoming very painful on the East Dean side, which hitherto has not been so bad as the West

Dean side, although many have long been suffering in East Dean. The Whinney and Mitchell Road line, it is said, has passed into the hands of the Great Western Railway Company, and it is expected that work will shortly be resumed on it, with a view to its completion.

THE MANUFACTURE OF DYNAMITE.

Supreme Court of Judicature, April 4 and 5—Court of Appeal.

THE BRITISH DYNAMITE COMPANY V. MESSRS. KREBS AND CO.

This was a suit originally brought by the plaintiff company against the defendants, Messrs. Krebs Brothers and Co., of Cologne (who are the manufacturers of the explosive compound lithofracteur), and against their agents in England, for an infringement of the patent in this country. The patent on which the plaintiffs relied, and which they complained was being infringed by the manufacture and sale of lithofracteur, was taken out in 1867. The cause was heard before Mr. Justice Fry in June last year, when his Lordship held that the defendants had to some extent made use of the plaintiffs' invention, and that the plaintiffs were, therefore, entitled to an injunction, with an account of the profits.

On the appeal, the Attorney-General, Mr. Macrory, and Mr. Fielding Nalder appeared for the appellants, and Mr. Aston, Q.C., Mr. E. Cutler, and Mr. Chester for the Dynamite Company. The Attorney-General opened the proceedings on behalf of Messrs. Krebs and Co., praying a reversal of the judgment of the Court below, on the grounds that the instructions contained in the patent of 1867 were insufficient and that the claim was too wide; that it was, in fact, what is known as a roving patent.

Mr. Aston then proceeded to argue the case on behalf of the Dynamite Company. At the conclusion of the learned counsel's arguments on the second day of the hearing.

The Master of the Rolls, without calling on the Attorney-General to reply, said that although, on the one hand, a Judge must not be astute to defeat a patent, yet, on the other, he must not extend a patent so as to cover that which was not then discovered. The question here was whether the alleged discovery was reduced to that form and described in such terms that a competent workman taking the specification into his hands would be able to manufacture the article, the subject of the patent, without any experiment. In his opinion in all these respects the specification failed in complying with the necessary conditions, the instructions were insufficient, and the claim was too wide, and he thought the order of the Court below should be discharged, and the bill dismissed with costs.

Lord Justices James and Thesiger concurred. They thought that on both points the judgment of the Court was wrong, and the appeal must be allowed.

THE YNISCEDWYN COMPANY.

We referred to this company in last week's Journal as one deserving the attention of the investing public. The property itself is of very considerable extent, comprising 3500 acres of minerals, including coal, iron, freestone, and limestone. The coal measures yield various qualities, including the best anthracite coal, the demand for which is very large, and continually growing, both for manufacturing and steam purposes. One of the peculiarities of the best anthracite coal is that it adapts itself specially to the manufacture of the highest quality of iron and steel, a recommendation in itself which at all times, and especially now when the common makers of iron are being entirely superseded by the better material, will ensure a large and ready sale for this class of fuel.

The iron and steel formerly turned out at these works is world-known as being equal, if not superior, to that manufactured at any other works, while the furnaces are capable of producing a larger yield than any others at which the same class of coal is used. The steelworks can produce the highest quality of Sheffield or tool steel, worth 60¢ per ton, for which there is a large demand, while the supply is small. All the works are in perfect order, and a return can, therefore, be made at once. An important feature in connection with the Yniscedwyn Company's property is its situation—within 13 miles of the large town of Swansea, which is the chief shipping port of South Wales, and being directly connected with the Great Western, the London and North-Western, and the Midland Railways, it is in a position to command all the best markets for its produce, and, indeed, to send it to all parts of England or of the world.

With what seems to us a very moderate estimate of the profits, it is calculated that the coal and iron will return over 11,500¢ per annum, which, allowing for all charges, will admit of dividends of 14 per cent. on the capital of the company; and considering that something like a quarter of a million of money has been laid out on the property, and that it is valued by Messrs. Daniel, of Swansea, one of the best known and most highly respected firms of engineers in the kingdom at 137,472¢, the estimate of profit appears a very cautious one. In fact, the former owners paid large dividends, amounting at one time to 50 per cent., upon their capital of 100,000¢, and the new company should, therefore, have little difficulty in extracting considerably larger profits than the prospectus promises. Indeed, we shall be much surprised if those who invest in the Yniscedwyn Company's shares do not reap an income far in excess of that anticipated.

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week the tone and result of the important debate in Parliament—as well as the evidently pacific nature of the Russian Chancellor's reply to our Foreign Secretary's despatch, though it may be considered doubtful if the latter represents the true state of Russian opinion, or is simply a matter of policy—have both led to a more hopeful view being taken of the political situation. Prices are generally higher, but business continues on as small a scale as ever. The Board of Trade Returns for March are still unsatisfactory as regards imports, but exports, being practically the same, must be considered satisfactory, taking into account the restriction trade must have suffered from the state of politics. The usual fortnightly settlement is now in progress; particulars of the continuation business done are given below—transactions now entered into are for settlement April 19.

In shares of iron and coal, concerns the principal movements are an advance of 7s. 6d. per share on Bolckow, Vaughan, A., with a decline of 5s. on Chillingham. Benhar are now quoted ex div. Chapel House shares are neglected, but more business has been done in the 7½ per cent. debentures. Bolckow, Vaughan, and Company have received from the North of England Iron Trade Board of Arbitration, being resolved to settle their own wages disputes in future by themselves; this may be taken as showing the masters are again getting control of the workmen, and will it be hoped lead to a sounder state of trade. At the sixth annual meeting of the Chillingham report given in last week's Journal was adopted, and the retiring directors re-elected. Nothing new transpired beyond that the Chairman said the year's output had only been 19,000 tons of finished iron, which was but half the capacity of their works. The average price realised had been 18s. 1d. per ton, which was just about half the price it was when the company was formed. The Scottish Australian Company's sales of coal for January amounted to 14,457 tons.

In shares of foreign copper concerns, Tharsis (new) have advanced 10s. per share, and the old shares 7s. 6d. each, while Rio Tinto 5 per cents. are reduced 3s., and the 7 per cents. 2s., to approximate with the London quotations. The report issued by the Tharsis Company, and which is given below, is considered very satisfactory, as it is evident so productive a mine, and which can pay so good a percentage in the present dull times, when nearly all the other concerns are making losses, is an investment which rests on a sound basis. The monthly advances just received from the Yorkshire Peninsula Company's property are considered good; the stock of ore on Jan. 31 was 300 tons of 17 per cent. and 610 tons of 5 per cent. dredge, together worth (say) 3800¢; 200 tons were being shipped to this country. Hualfahall are at 7s. to 8s. New Quebrada, 32s. 6d.

In shares of home mines, tin shares are most in request, the market for that metal being relatively the firmest. Copper shares neglected. There is also some enquiry for lead shares, although the price of lead itself offers no inducement to invest in such shares. The principal mines, Great Laxey and Van, would respectively yield 10 and 8 per cent. to investors at present quotations, basing the calculations on the dividends last paid. Leadhills and Roman Gravel are firm, as the present prices include the dividends—namely, on the former 3s. per share, payable April 17; and on the latter 5s. per share, payable April 30. It is understood the shares of the Llanidloes Lead Mining Company are being well taken up; and, as the capital is very moderate, while it is thought certain that the powerful lodes found on the property will continue to a great depth, the prospects seem very fair. The other new company, the Great Wheal Rodd, will, it is considered, be a great success. Bampfyde are at 4s.; Carn Brea, 4s.; Combmartin, 3½; Dolcoath, 3s.; Glenroy, 1; Great Laxey, 15½ to 16½; Killfirth, 2s.; Rhosomer, 1½ to 1¾; South Condurrow, 11 to 11½; Tincroft, 12; West Chiverton, 12½ to 13½; West Tankerville, 14 to 15.

YNISCEDWYN COMPANY (Limited).—This is introduced as by far the most eligible concern as a really sound investment that has ever been brought before the notice of the public, and the shares are being taken up to some extent in

Glasgow. The property is the most celebrated in the anthracite district, and it has been acquired under very favourable circumstances. For many years the former proprietors made large profits, some of which exceeded 30,000¢ a year, and the whole being on the most modern and approved principles, profitable working may be carried on even in bad times. It is calculated that this will be the case with the present company, which calculations are supported by careful investigations made by competent parties during the last eight months as to the correctness of the leases, statements, and profits of the former proprietors. The capital is 60,000¢, in 10¢ shares.

WEST PATELEY LEAD MINES (Limited).—This company, to which attention was directed some time since, is opening out very well. The extraordinary richness of the neighbouring mines, and the length of time they have lasted, with the almost certainty of their lodes continuing through this company's property, indicate that it is a property of no ordinary value. The lodes are numerous, soft and easy to work; is also the lead almost pure, and requires little dressing. The capital—20,000¢—is so moderate it is probable the regular and increasing returns hereof will be made in a very profitable result.

THARSIS SULPHUR AND COPPER COMPANY (Limited).—The following are the principal contents of the directors' report to be submitted to the ordinary general meeting of shareholders on the 18th inst.:—The interest on the second issue of 150,000¢ debentures has been charged to interest and discount account, as usual. A special resolution is to be proposed enabling the directors, as they consider most expedient, either to reissue or pay off these securities as they become due. The total amount of debentures is 250,000¢. The net surplus from the downward traffic, after deducting, as usual, the interest on the first issue of debentures of 100,000¢, is 15,098¢, and the net surplus from the upward traffic is 2942¢, making together 18,040¢, of which 5000¢ has been carried to the reserve fund, making it 18,124¢, and the balance of 13,088¢ has been credited to profit and loss account, as usual. The railway and pier sinking fund remains at 100,000¢. The net profits for the year 1877, together with 1887, 8s. from previous year's account, amount to 165,359¢, from which a dividend is recommended to be paid of 17½ per cent., free of income tax, the first half being payable on May 10 next, and the second half on Nov. 8 following; and that the balance of 7859¢ be carried forward to the credit of the year 1878. The stocks in trade in Britain are valued at a reduction of 55,645¢, and those in Spain also at a reduction of 9089¢.

The Spanish property and plant accounts have been written down 8919¢, charged to profit and loss, in addition to the charge against the cost of production in Spain. The miscellaneous assets have been written down 6000¢. The additions to the works and plant account for metal works in this country is 5029¢, of which 7260¢ was spent in the purchase of the freehold of additional land for the works at Widnes, which has enabled the company to obtain a connection with the Midland, in addition to the former connection with the London and North Western, and has otherwise greatly added to the accommodation and convenience of the works. All the repairs have been carried on as circumstances permitted during the past year, and a pilot-engine can now be dispensed with. By the end of 1878 the improvements will be completed over the whole line. The outlay on these works last year has been 18,870¢, all of which has been charged to revenue. During the year there have been shipped from the pier of pyrites 234,693 tons of large ore and 14,806 tons of small ore, making a total of 249,299 tons. Of pyrites there were shipped 7199 tons. All these figures show an increase over 1876. The pier continues in good order; the cranes have worked well, and have been found quite equal to all requirements.

In regard to the mines, we find, taking Tharsis first, that the removal of the overburden on the north side and open-cast has been prosecuted with great energy during 1877. This side yielded a total of 353,264 tons last year, of which there were sent to the port for shipment 181,768 tons, and to the calcination ground 129,495 tons. Although the quantity yielded is larger than in 1876, the quantities disposed of both ways are smaller. The quantity of sterile removed was 227,967 cubic metres, as against 117,714 in 1876. The cost was 20,089¢, of which 16,540¢ was borne by the extraction. This exceptionally large expenditure will enable the mineral of the fourth floor to be worked out without further outlay, and ultimately down to the second floor, where additional expenditure is required. The uncovering of the centre lode is now nearly completed to the extent necessary for working to the depth of the second floor. The overburden removed was 55,816 cubic metres, at a cost of 5468¢. The total quantity of ore raised was 69,705 tons, against an estimate of 60,000 tons, and 5712 tons in 1876. The quantity sent to the port for shipment was 62,018 tons, and to the calcination ground 2316 tons. The mineral was charged with the sum of 3688¢, leaving a balance of 1800¢ to be debited to the centre lode overburden account, making the total this 15,674¢. Mineral was begun to be extracted in September from the Sierra Bullones branch of the north lode, and a total of 12,907 tons of good ore was raised from this source last year, while it is hoped it will yield 70,000 tons in the current year. The Poca Pringue is another new branch, adjoining the Sierra Bullones, and now being explored; it is thought they are likely to run into one mass.

As to the other mine, Calanas, it continues to give excellent results. The total mineral raised was 46,044 tons, against 41,111 tons; 45,415 tons were put to calcination, against 40,307 tons in the year 1876. The ore which had been washed amounted to 42,068 tons, and the precipitate produced to the amount of 1840 tons, both quantities showing a corresponding increase. The reservoir was completed during the year, as also an addition to the washing and precipitating tanks. This expenditure has increased the fixed property account by 3429¢. The total mineral raised during 1877 from all the lodes was 481,920 tons. It may be as well to explain that these are tons of 1000 kilograms; in consequence of this system of tonnage having been adopted by the previous Spanish and French workers of these mines this system formed the basis for payment of wages and of customs' duties; and, as a consequence, all the weighing machines on the mines are divided to suit metrical tons.

The inventory of waste heaps at Tharsis has been written down by the usual amount of 4000¢, and now stands at only 4933¢. During the year labour has been plentiful, and the workpeople have been contented and well behaved. The number employed at Tharsis in 1877 was 3181, embracing a population of about 6500, resident at, or depending on, these mines. The amount at the credit of depositors in the savings bank at Tharsis, on Dec. 31 last, was 8756¢, against 5737¢ in 1876, and 2889¢ in 1875.

A large amount of important work has been accomplished during the past year, such as tramways and roadways in and around the mines, enlargement of railway station, new stables, granary, workmen's houses, new school at Corrales, and all machinery erected at the Sierra Bullones, &c. The depreciation has been so liberal that the fixed property and plant account in Spain for 1877 has only been increased by the sum of 2543¢. The rainfall in 1877 was only 18.11 in., against 31.50 in. in 1876—in fact, there was a drought till the last week in March, when rain began to fall; so it is hoped there will be a continuance of it, in order that the reservoirs may be re-stocked; otherwise the cementation processes will be interrupted.

As the meeting will be held next week, there is little occasion to remark in the meantime on a report so clear as the Tharsis Company's always is. The year 1877 has been marked a period of severe depression in the commercial world, and the depression of the two previous years, but, on the contrary, increased inactivity in business. Probably at no former time have chemicals and metals ranged so low in price; and the products of the Tharsis Company—viz., copper, sulphur, and iron—have formed no exception. In these circumstances, the results detailed in the foregoing report must be considered satisfactory. In regard to the future, it is very probable that good results will come out of the agreement recently concluded between this company and the representatives of the San Domingo and Rio Tinto Mines; but, even allowing the depression of trade increases in severity, the inexhaustible productiveness of the mines prove that a large dividend always can be paid so long as copper is a marketable commodity, while the sound system of finance the concern has been worked upon will gradually tell with more effect. Those who may wish to examine the company's progress in later years can refer to the annual reports given in the Journal of April 24, 1875; April 22, 1876; and April 21, 1877; all of which are so arranged as to render comparison with the report now given very easy. J. GRANT MACLEAN, Stock and Share Broker. Post Office Buildings, Stirling, April 11.

SOUTH DAREN.

FOR SALE, FIFTY fully paid-up SHARES, at 40s. per share.—The mine is making a good profit, and will soon do even better. Address, Mr. C. E. CORNWALL, 73, Balfour-road, Highbury New Park, N.

TO BE LET FOR A TERM, THE OLD NORTH BUCKLAND IRON MINES, GEORGE HAM, BARNSTAPLE, DEVON. For particulars, apply to Mr. JOHN LITSON, Countisbury, Tynmouth, Devon.

A MOUNTAIN OF SUPERIOR FIRE-CLAY FOR SALE.—An EXTENSIVE SETT, and quantity proved to be practically inexhaustible. Open quarry working, and no sinking. The clay is of exceptional quality; makes the finest white Dinas silica brick, also a brick equal to Stourbridge; also excellent cement. Contiguous to excellent shipping port and railway station.

WILL SELL THE WHOLE OR PART, OR ARRANGE WITH A COMPANY FOR PART CASH AND SHARES. Bona fides only treated with. Address for further particulars, "Fire Clay," care of Henry Greenwood, Advertising Agent, Liverpool.

M. R. TIMOTHY HUGHES, MINING AGENT AND SHAREDEALER, 59, SEEL STREET, LIVERPOOL. Reliable information given respecting Welsh and Manx Mines.

PRINCE PATRICK MINE. New Issue of 12,000 Preference Shares. T. H. strongly recommends his friend and the public to secure an interest at once in this very valuable mine while the shares can be obtained under such favourable circumstances. See report in Supplement to Mining Journal, March 9th, also advertisement in Journal of March 16th.

MINES OF EVERY DESCRIPTION, AT HOME AND ABROAD, CAREFULLY INSPECTED AND VALUED. Address, MARSHALL AND CO., St. Antholin's Chambers, 36, Budge-row, Cannon-street, London, E.C.

TO MINING COMPANIES AND OTHERS.

VALUABLE MINING PROPERTY TO BE LET.

A VALUABLE MINE OF LEAD AND COPPER ORE having been discovered at WOODLANDS, CLONSILLA, near DUBLIN, the OWNER, Lord Annull, is PREPARED TO ALLOW properly authorised PERSONS TO INSPECT IT, with a view to making arrangements for LETTING the SAME.

Mining operations have already been carried on to an extent sufficient to show that the lodes of both lead and copper are most promising, and the situation peculiarly advantageous for working the mine and for carriage of ore both by canal and rail.

Mr. Thomas Poole, the steward of Woodlands, Clonsilla, will show the grounds to persons desirous of inspecting the same on their producing a reference from any respectable merchant or firm.

THE OWNER OF AN EXTENSIVE COPPER CONCESSION (similar to Lake Superior), situated in an Island in the Mediterranean NOW AT WORK, and held from the French Government on most favourable terms, OFFERS ONE FOURTH SHARE TO PERSONS WILLING TO ADVANCE progressively £12,000 for the FURTHER DEVELOPMENT OF THE SAME. The fullest information, as well as plans, maps, specimens, reports, &c., will be furnished by applying to C. HARCOURT, Esq., solicitor, 19, King's-road, Bedford-row, London, W.C.

EXTENSIVE LEAD MINING PROPERTY FOR SALE IN NORTH WALES, with DRESSING and other MACHINERY erected, and ready for full operations. Price £2500, of which sum a large proportion may remain on approved security or joint interest taken with the purchaser. Address, W. LIDDELL, 15, Union-court, Old Broad-street, London, E.C.

SEVEN PER CENT. PREFERENCE SHARES.

THE COTTON POWDER COMPANY (LIMITED).

OFFICES,—23, QUEEN ANNE'S GATE, LONDON, S.W. WORKS,—FAVERSHAM, KENT.

Capital £60,000, in 12,000 Ordinary Shares of £5 each, of which 5041 remain to be issued.

Issue of 3000 Shares, bearing a Preference Dividend of Seven per Cent., pursuant to Special Resolution. £1 to be paid on application, £1 10s. on allotment, and the remainder in two equal instalments of £1 5s. each, on two months' notice being given of the intention to call up the same respectively.

DIRECTORS.

J. RAMSAY LAMY, Esq., F.R.S.E.—CHAIRMAN.

R. H. WALLACE DUNLOP, Esq., C.B.

Colonel W. NASSAU LEES, LL.D., Ph.D.

EDWARD W. LANE, Esq., M.D.

Com.-General R. M. GARDINER.

MANAGING DIRECTOR—R. M. GARDINER.

BANKERS—Messrs. WILLIAMS, DEACON, and CO.

SOLICITORS—Messrs. TILLEARD, GODDEN, and CO.

AUDITORS—Messrs. SMART, SNELL, and CO.

This company has been in operation since November, 1875, as manufacturers of a powerful and safe explosive, known as Tonite, or Cotton Powder, which is now extensively used in Mines and Quarries, also for Submarine Work.

TORPEDOES, FOG SIGNALS FOR TRINITY HOUSE SERVICE, &c., and is rapidly gaining ground in the market.

The directors are authorised to issue the above-mentioned preference shares for the purpose of paying off a debenture debt, and for increasing the company's business. Subscriptions are invited accordingly.

For further particulars, see full prospectus, to be had at the bankers, 20, Birch-lane, E.C.; the solicitors, 34, Old Jewry, E.C.; and the company's offices, 23, Queen Anne's Gate, S.W.

NOTE.—Persons wishing to subscribe are referred to the prospectus, which will be forwarded to them free on application, and which contains all necessary particulars, and specifies the names and dates of the parties to all existing contracts.

| LEAD ORES. | | | | | |
|---------------------|--------|-------|----------------|------------------------|--|
| Date. | Mines. | Tons. | Price per ton. | Purchasers. | |
| April 5—Minera | | 77 | £11 11 6 | Walker, Parker, & Co. | |
| — ditto | | 50 | 10 8 6 | ditto | |
| — ditto | | 50 | 10 10 0 | Panther Lead Co. | |
| — ditto | | 29 | 10 12 0 | ditto | |
| — ditto | | 23 | 10 13 6 | Jacob Walton and Co. | |
| — ditto | | 9 | 10 7 6 | Walker, Parker, & Co. | |
| 6—West Wye Valley | | 60 | 10 10 0 | Weston, Son, and Co. | |
| 11—De Broke | | 20 | 10 8 0 | Panther Lead Company | |
| — Talargoch | | 80 | 11 11 6 | Walker, Parker, & Co. | |
| — Maesgrewddu | | 30 | 11 18 6 | ditto | |
| — Coetia Llys | | 30 | 10 8 6 | Adam Eytton. | |
| — North Hendre | | 100 | 10 8 0 | Sheldon, Bush, and Co. | |
| — ditto | | 80 | 10 7 0 | Walker, Parker, & Co. | |
| — ditto (round) | | 23 | 13 0 0 | Sheldon, Bush, and Co. | |
| — Gorsedd & Merilyn | | 50 | 11 5 6 | ditto | |
| — East Fand Du | | 60 | 10 5 6 | ditto | |
| — Prince Patrick | | 10 | 9 15 0 | ditto | |
| — Grosvenor | | 5 | 10 7 6 | ditto | |
| — Victor | | 19 | 9 5 0 | ditto | |
| — Rhod Alun | | 10 | 10 2 0 | ditto | |
| — Wagstaff | | 10 | 7 15 0 | Adam Eytton. | |

| BLENDED. | | | | | |
|----------------|--------|-------|----------------|------------------|--|
| Date. | Mines. | Tons. | Price per ton. | Purchasers. | |
| April 5—Minera | | 92 | £4 1 0 | Kenrick and Son. | |
| — ditto | | 32 | 3 18 0 | ditto | |
| — ditto | | 37 | 3 11 0 | Vivian and Sons. | |
| — ditto | | 28 | 4 2 0 | Kenrick and Son. | |
| — ditto | | 27 | 3 11 0 | Vivian and Son. | |
| 9—Talargoch | | 50 | 3 12 0 | Kenrick and Son. | |
| — ditto | | 50 | 3 9 0 | ditto | |
| — ditto | | 120 | 3 6 0 | Vivian and Son. | |
| — ditto | | 37½ | 3 8 6 | Vivian and Son. | |
| — ditto | | 12½ | 3 8 6 | Dillwyn and Co. | |

COPPER ORES.

Sampled March 27, and sold at Swansea, April 9.

| Mines. | Tons. | Produce. | Price. | Mines. | Tons. | Produce. | Price. |
|------------|-------|----------|--------|--------------|-------|----------|--------|
| Betts Cove | 130 | 5½ | £3 1 6 | Tan-y-Bwlch | 60 | 14½ | £3 1 6 |
| ditto | 139 | 5½ | 3 1 6 | Cambrian | 50 | 14½ | 3 1 6 |
| ditto | 129 | 5½ | 3 1 6 | ditto | 58 | 22½ | 3 1 6 |
| ditto | 129 | 5½ | 3 0 0 | ditto | 14 | 22½ | 3 1 6 |
| ditto | 143 | 6½ | 3 0 0 | ditto | 16 | 22½ | 3 1 6 |
| ditto | 143 | 6½ | 3 0 0 | ditto | 16 | 22½ | 3 1 6 |
| ditto | 105 | 6½ | 3 2 0 | Burnt Ore | 104 | 2 | 0 10 |
| ditto | 93 | 6½ | 3 3 0 | Berehaven | 93 | 2 | 0 10 |
| ditto | 93 | 6½ | 3 3 0 | Cop. Precip. | 21 | 42½ | 2 0 10 |
| ditto | 128 | 6½ | 3 4 6 | ditto | 21 | 42½ | 2 0 10 |
| ditto | 128 | 6½ | 3 4 6 | ditto | 6 | 21 | 31 6 |
| ditto | 128 | 6½ | 3 6 0 | ditto | 5 | 23½ | 31 6 |
| ditto | 128 | 6½ | 3 6 0 | Copper Reg. | 10 | 23½ | 31 6 |
| ditto | 129 | 6½ | 2 10 6 | ditto | 9 | 13½ | 7 11 |
| ditto | 129 | 6½ | 2 11 6 | ditto | 6 | 18½ | 10 10 |
| ditto | 129 | 6½ | 2 10 0 | Mixtures | 7 | 25½ | 14 10 |
| ditto | 83 | 6½ | 2 16 0 | Moonta | 73 | 25 | 14 10 |
| ditto | 83 | 6½ | 2 18 6 | ditto | 72 | 25 | 14 10 |
| ditto | 78 | 4½ | 2 9 0 | ditto | 72 | 25 | 14 10 |
| ditto | 78 | 4½ | 2 9 0 | ditto | 75 | 25½ | 14 10 |
| ditto | 82 | 4½ | 2 9 0 | ditto | 74 | 25½ | 14 10 |
| Knock | 128 | 9½ | 5 5 0 | | | | |

TOTAL PRODUCE.

| | | | | | | | |
|----------------------|------|-------|------------|------------------------|-----|-----|-------|
| Betta Cove..... | 1605 | 5 1/2 | £2061 18 0 | Berehaven ore | 93 | 2 | 0 10 |
| Seville Copper | 553 | 5 1/2 | 1452 13 0 | Cop. Precipitate | 53 | 104 | 10 10 |
| Aljustrel ore | 238 | 5 1/2 | 579 4 0 | Cop. Regulus | 9 | 68 | 8 0 |
| Knocknagore | 125 | 5 1/2 | 672 0 0 | Copper ore | 6 | 104 | 10 10 |
| Tau-y-Bewch..... | 260 | 5 1/2 | 994 10 0 | Copper matt | 7 | 104 | 10 10 |
| Cambrian | 116 | 5 1/2 | 1113 5 0 | Mixtures | 7 | 104 | 10 10 |
| Burnt Ore | 104 | 5 1/2 | 62 8 0 | Moonta ore | 369 | 572 | 13 0 |

| COMPANIES BY WHOM THE ORES WERE PURCHASED. | | | |
|--|-------|---------|------|
| Names. | Tons. | Amount. | |
| Copper Miners' Company | 340 | £1,869 | 4 6 |
| F. Grenfell and Sons | 202 | 1,070 | 13 0 |
| Evill, Bruce, and Co. | 323 | 2,163 | 10 0 |
| Virian and Sons | 707 | 2,112 | 3 0 |
| Williams, Foster, and Co. | 922 | 4,388 | 3 0 |
| Mason and Elkington | 388 | 1,188 | 3 0 |
| Charles Lambert and Co..... | 216 | 3,297 | 19 6 |
| Sweetland and Co. | 238 | 679 | 4 0 |
| Landore Copper Company | 71 | 917 | 7 0 |
| Total | 3407 | £17,799 | 19 6 |

COAL MINES REGULATION ACT, 1872.

EXAMINATION FOR MANAGERS' CERTIFICATES OF COMPETENCY.
DISTRICT UNDER THE CHARGE OF RALPH MOORE, Esq.,
H.M. INSPECTOR OF MINES.

NOTICE IS HEREBY GIVEN, that an EXAMINATION for MANAGERS' CERTIFICATES OF COMPETENCY, under the above Act, will be HELD on the 3rd day of May, and CANDIDATES IN-
ENDING TO PRESENT THEMSELVES at such Examination must, on or
before the 15th day of May, notify such intention to the Secretary of the Board
of the above-mentioned District, from whom all information as to particulars can
be obtained.
By order of the Board,
R. CORDER, Secretary,
280, Rensfrew-street, Glasgow.

B.—Persons who do not reside within the District are equally eligible for
examination with those who do.

TO JOINT-STOCK COMPANIES.
NOTICES AND NOTICES REQUIRED TO BE FILED AT THE OFFICE
OF THE REGISTRAR OF JOINT-STOCK COMPANIES,
Under the Companies Acts, 1862 and 1867.

THE BOARD OF TRADE hereby give notice that it has been
DETERMINED TO ENFORCE THE PUNCTUAL FILING OF RETURNS
NOTICES, required to be rendered to the Registrar of Joint-Stock Companies,
under the various sections of the above Acts of Parliament; and TO PROCEED
FOR THE RECOVERY OF PENALTIES incurred in cases of neglect to comply with
the provisions of the law.
The Registrar has been instructed to prepare a List of Companies in default, in
which proceedings may be instituted against such companies, if the returns
are not sent in to the Assistant Registrar, at his office, Truro.
Dated January 26, 1878.

HENRY WIGGIN AND CO.
(LATE EVANS AND ASKIN),
NICKEL AND COBALT REFINERS,
BIRMINGHAM.

Mr. E. JACKSON,
Associate of the Royal School of Mines,
ANALYST AND ASSAYER.
Analyses or Complete Analyses made of Copper, Silver, Lead, Zinc, Tin, and
other Ores.
ASSAYING TAUGHT.
106, QUEEN VICTORIA STREET, LONDON, E.C.

EMMENS AND CO. (LIMITED),
MINING ENGINEERS AND MANUFACTURING CHEMISTS.
CHIEF OFFICE:
104, PALMERSTON BUILDINGS, BISHOPSGATE STREET, LONDON, E.C.
MINING DEPARTMENT.—The Management of Mines undertaken, and Technical
Reports and Surveys made.
CHEMICAL DEPARTMENT.—Ores, Minerals, Acids, Salts, Arsenic, Pigments,
Dyes, &c., manufactured and dealt in.

JOHN L. M. FRASER,
BERSE COTTAGE, NEAR WREXHAM.
Fourteen years at the Great Miners' Mines.
MINES FAITHFULLY REPORTED ON, AND MINING ACCOUNTS
CAREFULLY AUDITED.

C. H. WALKER AND CO.,
MINING AGENTS AND ENGINEERS,
VALPARAISO AND SAN IAGO,
CHILE.

18 H.P. PORTABLE STEAM ENGINE, with link motion,
reversing gear, ready for delivery; also gear to wind and pump.
A 40 H.P. VERTICAL STEAM ENGINE, with link motion, reversing gear
(winding drum if required).
A 6-ft. PAN MORTAR MILL, VERTICAL ENGINE, and BOILER, with
outage and travelling wheels.
Apply to—
BARRORS AND STEWART, ENGINEERS, BARNBURY.

WINDING ENGINES, NEW PRINCIPLE, best and most
compact in the market. Several pairs ready.
PORTABLE WINDING AND SINKING ENGINES, the
cheapest and most convenient and durable.
STEAM CAPSTANS AND HAULING ENGINES. The greatest
power in the space of any made.
HORIZONTAL, VERTICAL, AND PORTABLE ENGINES.
First-class make and low price.
**PUNCHING, SHEARING, DRILLING, AND OTHER
MACHINES.**
Many of the above secondhand, very cheap.
**ALEXANDER SMITH, ENGINEER, THE MIDLAND MACHINERY
STORES.—Offices: PRIOR STREET, DUDLEY.**

TWENTY-FIVE H.P. PORTABLE ENGINE, FOR SALE, with
link motion reversing gear, suitable for Pumping, Winding,
&c. almost new, ready for delivery.
J. H. RIDDEL & CO., 40, JAMAICA STREET, GLASGOW.

LOCOMOTIVE TANK ENGINES
FOR MAIN LINE TRAFFIC, SHORT LINES COLLIERIES,
CONTRACTORS, IRONWORKS, MANUFACTURERS, &c. from superior
material, equal to their first-class Railway Engines, and specially adapted to
curves and heavy gradients, may always be had at a short notice from—
MESSRS. BLACK, HAWTHORN, AND CO.,
LOCOMOTIVE, MARINE, AND STATIONARY ENGINE WORKS,
GATSFHEAD-ON-TYNE.

THE BIRMINGHAM WAGON COMPANY
(LIMITED)
MANUFACTURE RAILWAY CARRIAGES AND WAGONS OF EVERY DE-
SCRIPTION, for HIRE and SALE, by immediate or deferred payments. They
have also wagons for hire capable of carrying 6, 8, and 10 tons, part of which
are constructed specially for shipping purposes. Wagons in working order main-
tained by contract. MANUFACTURERS also of IRONWORK, WHEELS, and
ALLIES.
WAGON WORKS,—SMETHWICK, BIRMINGHAM.
Royal 8vo, pp. xvi-294, stitched in wrapper, with 4to Atlas,
containing 140 Plates. Price £4.

ALBUM TO THE COURSE OF LECTURES
ON METALLURGY,
AT THE CENTRAL SCHOOL OF ARTS AND MANUFACTURES.
By S. JORDAN, C.E.
London: TRUBNER and Co., Ludgate Hill.
Just published, 8vo., cloth, 10s. 6d.,

ROCK BLASTING:
A PRACTICAL TREATISE ON THE MEANS EMPLOYED IN BLASTING
ROCKS FOR INDUSTRIAL PURPOSES.
By GEO. G. ANDRE, F.G.S., Assoc. Inst. C.E.
FIFTY-SIX ILLUSTRATIONS, AND TWELVE PLATES.
London: E. and F. N. Spon, Charing Cross.
New York: 416, Brome-street.

Now publishing, to be completed in 30 parts, at One Shilling each.
**THE STUDENT'S GUIDE TO THE PRINCIPLES OF COAL
AND METAL MINING.**
Specially written for the use of persons studying for Colliery Managers' Certifi-
cates, and Students of the Principles of Mining, in connection with the South
West of England Science and Art Department. Undersurveyors, Surveyors, Overmen,
and other Colliery Officials will find it of much service, inasmuch as it contains
the details of Mining which occur in their daily routine.
The work will be profusely illustrated, containing over ONE HUNDRED
PLATES when complete.
The several heads treated upon are Geology, Mineralogy, Strength of Materials,
Ventilating, Boring for Exploration, Sinking and Securing of Shafts, Pumping,
Lifting, and Hauling, Blasting, Ventilation, Making and Securing Roadways,
Systems of Working, Boring against Accumulations of Gas and Water, Dams to
Back Water, Surveying, and the Crushing and Dressing of Ores.
The work is designed to embrace the whole subject of Mining in one volume, in
a form as to be clear, explicit, and practical.
No similar work has yet been published.

J. G. CAMPBELL AND CO., SUNDERLAND.
CURTICE and Co., Catherine-street, Strand, London.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and
of the ALVIGGAN AND BURNGULLOW TIN MINING COMPANY
(LIMITED).—The Vice-Warden has, by an Order made in the above Matter,
bearing date the 4th day of April instant, appointed CHARLES WILLIAM
CLINTON, of Truro, within the said Stannaries, an Officer of the said Court, to
be absolutely the OFFICIAL LIQUIDATOR of the ABOVE-NAMED COM-
PANY.
Dated Registrar's Office, Truro, April 4th, 1878.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and
of the ALVIGGAN AND BURNGULLOW TIN MINING COMPANY
(LIMITED).—Notice is hereby given, that ALL CREDITORS of the above-
named company are required, on or before the 15th day of April instant, to SEND
IN their NAMES and ADDRESSES, and the AMOUNTS and PARTICULARS
of their SEVERAL CLAIMS, to CHARLES WILLIAM CLINTON, the Official Li-
quidator of the said company, at the Stannaries Court Office, in Truro.
FREDERICK MARSHALL, Registrar.
Dated Registrar's Office, Truro, the 11th day of April, 1878.

**MINING MACHINERY, &c., IN UNY LELANT, CORNWALL,
FOR SALE.**

MR. BERRYMAN will offer for SALE, BY PUBLIC AUCTION,
on Tuesday, the 16th instant, at Eleven A.M., at the PROVIDENCE
MINES, in suitable Lots, the remainder of the
MACHINERY, MATERIALS, &c.,

Thereon, consisting of—
ONE 40 inch PUMPING ENGINE.
ONE 30 inch STAMPING ENGINE.
ONE 23 inch WINDING ENGINE; and
ONE 20 inch "MAN ENGINE," with BOILERS, &c., &c.
ONE heavy 10 feet diameter TOOTHWHEEL.
ONE 8 inch HORIZONTAL ENGINE.
Balance bobs; six pulverisers; calciner and water wheel; round buddles and
gearing; machine and hand frames; sundry water wheels from 8 to 14 ft. di-
ameter; steel wire rope; tin knives, tin chests, wood roofing, launders, carpenter's
tools; a good dial; and also the account-house furniture, consisting of a good
eight day clock, tables, chairs, glass, earthenware, cutlery, culinary utensils, iron
bedstead, desks, cupboard, candle chests, two water barrels, and numerous other
articles.
For further information, apply to Capt. HOLLOW, the Manager on the Mine;
Mr. E. TAYLOR, the Purser, Penzance; or to the Auctioneer, 23, Clarence street,
Penzance.—Dated 5th April, 1878.

**THE MERRYBENT ESTATE, IN THE NORTH RIDING OF
YORKSHIRE.**

MESSRS. WATSON AND SON are instructed by the
Mortgagee, with power of sale, TO OFFER FOR SALE, BY AUCTION,
at the King's Head Hotel, in Darlington, on Monday, the 29th day of April, 1878,
at Two for Three o'clock in the afternoon, subject to conditions, all that VALU-
ABLE FREEHOLD ESTATE, called

MERRYBENT,

Situate in the parishes of Melsomby and Middleton Tyas, in the North Riding of
the county of York, consisting of—
TWO FARM HOUSES, with the necessary HOMESTEADS and FARM
BUILDINGS, and PASTURE MEADOW, and ARABLE LANDS, with COT-
TAGES thereon, containing altogether 347 A. 1 R. 19 P.; or thereabouts, all now in
the occupation of Mr. Matthew Martin.
The property is seven miles from Darlington and six from Richmond, at both
which towns there are excellent markets.
A great portion of the estate is underlaid by the mountain limestone, which
has been proved to be of considerable thickness and of good quality. Valuable
veins of lead and copper have also been found, and there is an excellent bed of
freestone on the property.
A line of railway from the Darlington and Barnard Castle branch of the North-
Eastern Railway, within a very short distance of the eastern boundary of the estate,
and by means of this railway the minerals can readily be carried to any part
of the country.
The DRAWING ENGINE, BOILERS, and other fixed PLANT and MA-
CHINERY now on the estate WILL BE SOLD along with it.
From its great mineral resources the estate cannot but prove a most valuable
investment. The limestone is very well adapted for smelting purposes, and if
properly worked a very considerable revenue could be derived from this source
alone.
Plans and particulars may be obtained of the Auctioneers, at their offices in
Darlington; of Messrs. SYMS and SON, Solicitors, 7, Farnival's Inn, London; or
of Messrs. SCHOLLEY, WILSON, and NORTH, Solicitors, Wakefield.

THE NEW VICTORIA SALT COMPANY

(LIMITED).

456 212 SHARES—WITHOUT RESERVE.

MESSRS. EDWIN FOX AND BOUSFIELD WILL SELL, at the
Mart, Tokenhouse-yard, in the City of London, on Wednesday next,
April 17, at Two precisely, in Lots, 456 SHARES, of £12 each, to be issued, £10
paid up, in the NEW VICTORIA SALT COMPANY (LIMITED).
A call of £1 per share has been made on the shares, of which 15s. is now payable,
with interest at 5 per cent. from the 1st January last, and 6s. will become payable
on the 1st July, 1878; the remaining £1 per share is expected to be called up
shortly.
Particulars of Messrs. HOLLAND, SON, and COWARD, Solicitors, Commercial Sale
Rooms, Mincing-lane, E.C.; at the office of the company, 14, George-street, Man-
chester House, E.C.; at the Mart; and of Messrs. EDWIN FOX and BOUSFIELD, 99,
(late 24) Gresham-street, Bank, E.C.

GLAMORGANSHIRE.

PARISHES OF LLANTIRISANT AND LANTWIT YARDRE.

**ALL THAT VALUABLE LEASEHOLD MINERAL
PROPERTY, known as
POWELL'S LANTWIT COLLIERIES (LIMITED),**
Situate in the above parishes, and in direct communication with the shipping
ports of Cardiff and Penarth, comprising about THREE HUNDRED AND
TWENTY-SEVEN ACRES OF UNWORKED COAL, of the Nos. 1, 2, and 3
seams Lantwit House and Gas Coal, together with the suitable BULLINGS,
FIXED PLANT, and MACHINERY, and ample railway siding accommo-
dation, which WILL BE SOLD, BY AUCTION, in One Lot, and as a going con-
cern, by Mr. WILLIAM BENJAMIN GRAHAM (of the firm of William
Graham and Son), the person appointed by Vice-Chancellor Bacon to dispose of
the same, at the Angel Hotel, Cardiff, on Tuesday, the 7th May, 1878, at Three
o'clock in the afternoon precisely.
Descriptive particulars, conditions of sale, lithograph plan, and orders to view
the property, may be obtained of the Auctioneer, Victoria Chambers, Newport,
Mon.; of ALFRED GOOD, Esq., the Official Liquidator, New Poultry Chambers,
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tion from the said Government, containing one mile square, west of and adjoining
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former owners.
The title-deeds and documents, and plans and surveys of the property may be
seen, and further information may be obtained, by application to PRESCOTT
EMERSON, Esq., Q.C., Master-in-Chancery, at his office, in St. John's; or to
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Conditions of sale will be published hereafter.
PRESCOTT EMERSON, Q.C., Master-in-Chancery,
St. John's, Newfoundland, January 23rd, 1878.
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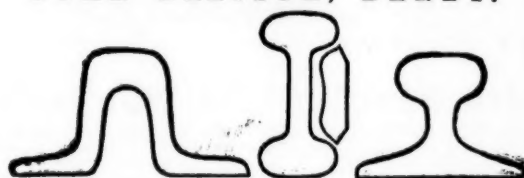
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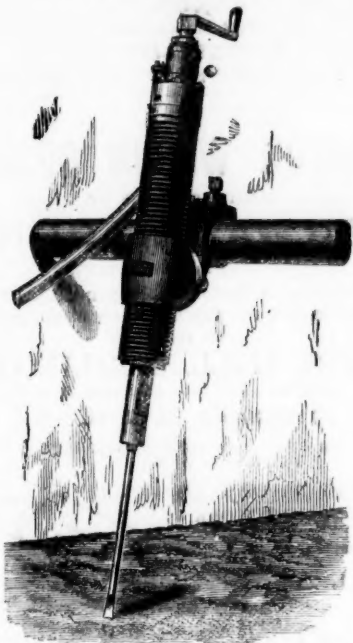
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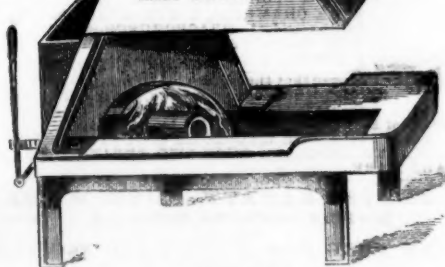
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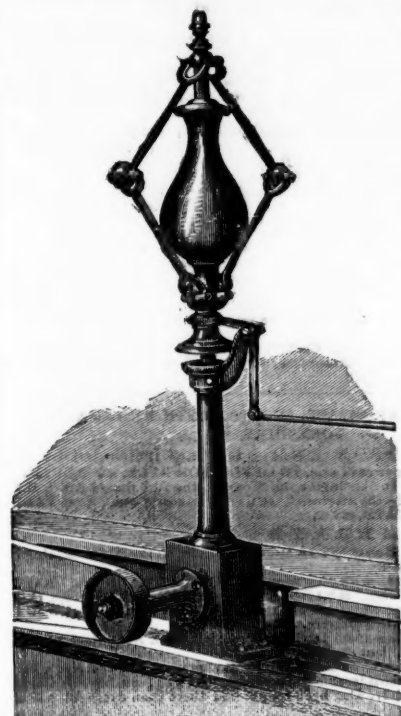
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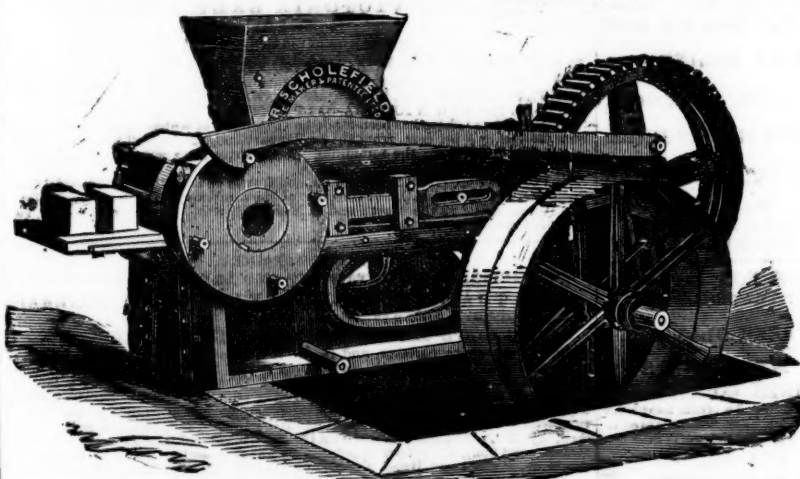
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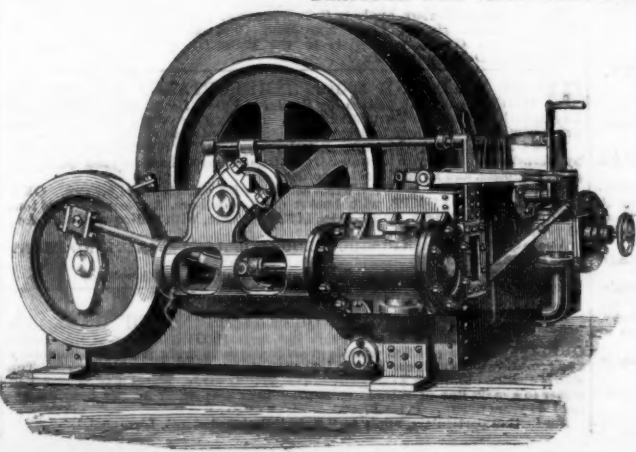
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| 1000 | Carn Brea, c, t, Illogan | 36 7 6 | — | — | 898 0 0 | 1 0 0 | Feb. 1876 |
| 2450 | Cook's Kitchen, c, Illogan | 24 4 9 | — | — | 11 17 0 | 0 0 0 | Jan. 1876 |
| 10240 | Devon Gr. Consols, c, Tavistock | 1 0 0 | — | — | 116 15 0 | 0 0 0 | July 1877 |
| 4296 | Dolcoath, c, t, Camborne | 10 14 10 | — | — | 112 6 3 | 0 0 0 | Mar. 1878 |
| 8000 | East Black Craig, c, t, Scotland | 5 0 0 | — | — | 0 10 0 | 0 0 0 | Feb. 1877 |
| 300 | East Darren, c, t, Cardiganshire | 32 0 0 | — | — | 236 10 0 | 1 0 0 | Aug. 1876 |
| 6 000 | East Pool, c, t, Illogan | 0 9 9 | — | — | 15 6 9 | 0 0 0 | Feb. 1878 |
| 40 000 | Glasgow Cars, c, t, 10,000 lss. p. | — | — | — | 0 13 4 | 0 0 0 | Feb. 1878 |
| 7500 | Gorewood and Merlyn Cons., c, Flint | 2 10 0 | — | — | 0 5 0 | 0 0 0 | Aug. 1877 |
| 15000 | Great Dyffke, c, t, Montgomery | 4 0 0 | — | — | 0 2 6 | 0 0 0 | Apr. 1876 |
| 15000 | Great Llan, c, t, Isle of Man | 4 0 0 | — | — | 23 11 0 | 0 0 0 | Apr. 1878 |
| 615 | Gr. Retalack, c, t, Penryn | 5 18 6 | — | — | 0 1 6 | 0 0 0 | Mar. 1876 |
| 6400 | Green Hurth, c, t, Durham | 0 6 0 | — | — | 1 18 0 | 0 0 0 | Jan. 1878 |
| 20000 | Groggion, c, t, Cardigan | 2 0 0 | — | — | 0 13 0 | 0 0 0 | Jan. 1878 |
| 9830 | Gunnalake (Olters), c, t, s | 5 6 0 | — | — | 0 14 0 | 0 0 0 | Oct. 1876 |
| 6000 | Holmbush, c, t, s, Callington | 1 0 0 | — | — | 0 4 6 | 0 0 0 | Sept. 1877 |
| 2800 | Isle of Man, c, t, Isle of Man | 25 0 0 | — | — | 82 5 0 | 0 0 0 | Feb. 1878 |
| 20000 | Leadhills, c, t, Lanarkshire | 6 0 0 | — | — | 0 15 0 | 0 0 0 | Mar. 1878 |
| 4000 | Leisburne, c, t, Cardiganshire | 19 15 0 | — | — | 585 10 0 | 1 0 0 | Feb. 1878 |
| 14000 | Llanidloes, c, t, Montgomery | 3 0 0 | — | — | 0 9 0 | 0 0 0 | Nov. 1876 |
| 9030 | Marke Valley, c, t, Llanidloes | 5 3 6 | — | — | 7 15 0 | 0 0 0 | Jan. 1878 |
| 10000 | Mellancor Copper, Hayle | 2 0 0 | — | — | 0 2 0 | 0 0 0 | Jan. 1878 |
| 9000 | Minera Mining Co., c, t, Wrexham | 5 0 0 | — | — | 87 10 0 | 0 0 0 | Feb. 1878 |
| 20000 | Mining Co. of Ireland, c, t, s | 7 0 0 | — | — | 23 17 6 | 0 0 0 | Jan. 1878 |
| 444 | North Busy, c, Chacewater | 3 9 6 | — | — | 1 10 0 | 0 0 0 | July 1877 |
| 10280 | North Hendre, c, t, Wales | 2 10 0 | — | — | 2 3 0 | 0 0 0 | Mar. 1878 |
| 30000 | Panty Mwyn, c, t, Mold (879 lss.) | 2 0 0 | — | — | 0 2 0 | 0 0 0 | Jan. 1878 |
| 8000 | Penryn and Area Cons., c, t, Redruth | 0 6 0 | — | — | 0 9 0 | 0 0 0 | Feb. 1877 |
| 6000 | Penrhall, c, t, St. Agnes | 3 8 6 | — | — | 3 13 6 | 0 0 0 | Jan. 1877 |
| 6000 | Penryn, c, t, St. Agnes | 5 0 0 | — | — | 0 10 0 | 0 0 0 | Mar. 1878 |
| 45793 | Penrthall, c, t, s, Gwynedd | 2 0 0 | — | — | 0 2 8 | 0 0 0 | Nov. 1876 |
| 18000 | Prince Patrick, c, t, Holywell | 1 0 0 | — | — | 0 14 0 | 0 0 0 | Jan. 1878 |
| 10000 | Red Rock, c, t, Cardigan | 2 0 0 | — | — | 0 4 0 | 0 0 0 | Jan. 1878 |
| 12000 | Roman Gravel, c, t, Salop | 7 10 0 | — | — | 7 15 0 | 0 0 0 | Mar. 1878 |
| 512 | South Cardigan, c, t, St. Cleer | 1 5 0 | — | — | 742 10 0 | 1 0 0 | Mar. 1878 |
| 6123 | South Condurrow, c, t, Camborne | 6 6 6 | — | — | 3 5 0 | 0 0 0 | Jan. 1878 |
| 12000 | St. Harmon, c, t, Montgomery | 3 0 0 | — | — | 0 6 0 | 0 0 0 | July 1877 |
| 1 000 | St. Patrick, c, t, s, (8000 sh. issued) | 1 0 0 | — | — | 0 7 0 | 0 0 0 | Oct. 1875 |
| 1 000 | Tankerville, c, t, Salop | 6 0 0 | — | — | 4 17 0 | 0 0 0 | Dec. 1876 |
| 6000 | Tinocroft, c, t, Pool, Illogan | 9 0 0 | — | — | 50 8 6 | 0 0 0 | May 1877 |
| 15000 | Van, c, t, Llanidloes | 4 5 0 | — | — | 22 15 6 | 0 0 0 | Jan. 1878 |
| 3000 | W. Chiverton, c, t, Penryn | 12 10 0 | — | — | 55 10 0 | 0 0 0 | Feb. 1878 |
| 1788 | West Police, c, t, St. Agnes | 10 0 0 | — | — | 1 19 0 | 0 0 0 | July 1876 |
| 612 | West Tolgus, c, t, Redruth | 95 10 0 | — | — | 26 15 0 | 0 0 0 | Feb. 1878 |
| 2000 | West Wye Valley, c, t, Illogan | 28 1 3 | — | — | 3 12 6 | 0 0 0 | Oct. 1872 |
| 1024 | W. Eliza Consols, c, t, St. Austell | 3 0 0 | — | — | 0 12 0 | 0 0 0 | Nov. 1877 |
| 2048 | Wheel Jane, c, t, Kea | 2 13 10 | — | — | 17 0 0 | 0 0 0 | Nov. 1876 |
| 4296 | Wheel Kitty, c, t, St. Agnes | 5 4 6 | — | — | 8 5 0 | 0 0 0 | July 1876 |
| 25300 | W. Newton, c, t, s, Calstock | 1 0 0 | — | — | 11 19 6 | 0 0 0 | Dec. 1874 |
| 80 | Wheel Owles, c, t, St. Just | 18 15 0 | — | — | 0 8 0 | 0 0 0 | Apr. 1877 |
| 3000 | Wheel Peever, c, t, Redruth | 7 11 0 | — | — | 529 10 0 | 4 0 0 | Aug. 1872 |
| 6000 | Wheel Prussia, c, t, Redruth | 0 6 0 | — | — | 0 4 0 | 0 0 0 | Apr. 1878 |
| 10000 | Wye Valley, c, t, Montgomery | 3 0 0 | — | — | 0 10 0 | 0 0 0 | Oct. 1876 |

FOREIGN DIVIDEND MINES.

| Shares. | Mines. | Paid. | Last wk. | Clos. pr. | Total divs. | Per sh. | Last pd. |
|---------|--|---------|----------|-----------|--------------|-----------|------------|
| 5530 | Alamillos, c, t, Spain | 2 0 0 | — | — | 1 19 3 | 0 0 0 | April 1878 |
| 80000 | Almaden and Rio Consol., c, t | 1 0 0 | — | — | 0 6 3 | 0 0 0 | May 1876 |
| 20000 | Australian, c, t, South Australia | 7 7 6 | — | — | 0 19 6 | 0 0 0 | June 1877 |
| 10000 | Battle Mountain, c, t, (6240 part pd.) | 5 0 0 | — | — | 0 10 0 | 0 0 0 | Nov. 1872 |
| 10000 | Birds Creek, c, t, California | 4 0 0 | — | — | 0 14 0 | 0 0 0 | June 1874 |
| 30000 | Capo Copper Mining, c, t, Africa | 7 0 0 | — | — | 30 10 0 | 0 0 0 | Mar. 1878 |
| 34433 | Cedar Creek, c, t, California | 5 0 0 | — | — | 0 8 0 | 0 0 0 | June 1878 |
| 35000 | Cesena Sul. Co., Romagna, Italy | 10 0 0 | — | — | 0 10 0 | 0 0 0 | Aug. 1877 |
| 15000 | Chicago, c, t, Utah | 10 0 0 | — | — | 2 8 0 | 0 0 0 | Nov. 1876 |
| 65000 | Colorado United, c, t, Colorado | 15 6 0 | — | — | 0 13 6 | 0 0 0 | Jan. 1878 |
| 10000 | Copahu, c, t, Chile (230 shares) | 15 6 0 | — | — | 7 11 5 | 0 0 0 | Jan. 1878 |
| 1 000 | Don Pedro North del Rey | 0 18 0 | — | — | 2 8 0 | 0 0 0 | Mar. 1872 |
| 23500 | Eberhardt & Aurora, c, t, Nevada | 10 0 0 | — | — | 1 8 0 | 0 0 0 | Dec. 1877 |
| 70000 | English & Australian, c, t, St. Aust. | 2 10 0 | — | — | 2 15 0 | 0 0 0 | Mar. 1877 |
| 80000 | Flintstaff, c, t, Utah | 10 0 0 | — | — | 4 2 0 | 0 0 0 | Mar. 1878 |
| 25000 | Fortuna, c, t, Spain | 2 0 0 | — | — | 6 19 0 | 0 0 0 | July 1873 |
| 50000 | Frontino & Bolivia, c, t, New Gran. | 2 0 0 | — | — | 0 10 0 | 0 0 0 | June 1878 |
| 80000 | Gold Run, c, t, Nevada | 1 0 0 | — | — | 0 2 4 | 0 0 0 | Oct. 1872 |
| 89000 | Kapunda Mining Co., Australia | 1 8 0 | — | — | 0 2 4 | 0 0 0 | June 1878 |
| 20000 | Lead Chance, c, t, Utah | 5 0 0 | — | — | 0 14 0 | 0 0 0 | July 1873 |
| 15000 | Linares, c, t, Spain | 3 0 0 | — | — | 17 10 0 | 0 0 0 | Apr. 1878 |
| 85000 | London and California, c, t | 2 0 0 | — | — | 0 10 0 | 0 0 0 | Apr. 1878 |
| 7857 | Lusitania, c, t, Portugal (25 sh.) | 3 10 0 | — | — | 1 11 6 | 0 0 0 | Mar. 1878 |
| 5000 | Mammoth Consolidated, c, t, Utah | 10 0 0 | — | — | 0 8 0 | 0 0 0 | Dec. 1872 |
| 5000 | Mountain Chief, c, t, France | 10 0 0 | — | — | 0 4 0 | 0 0 0 | Jan. 1878 |
| 10000 | Montebaud, c, t, Utah | 20 0 0 | — | — | 25 8 0 | 0 0 0 | Nov. 1877 |
| 100000 | Port Phillip, c, t, Cluene | 1 0 0 | — | — | 1 10 0 | 0 0 0 | Jan. 1878 |
| 54000 | Richmond Consol., c, t, Nevada | 5 0 0 | — | — | 4 0 0 | 0 0 0 | Feb. 1878 |
| 40000 | Santa Barbara, c, t, Nevada | 0 10 0 | — | — | 0 3 0 | 0 0 0 | Mar. 1877 |
| 1 00000 | Scottish Australian Mining Co., c, t | 1 0 0 | — | — | 15 per cent. | Nov. 1877 | |
| 60000 | Scottish Austral. Mining Co., New | 2 10 0 | — | — | 15 per cent. | Nov. 1877 | |
| 112500 | Sierra Butte, c, t, California | 2 0 0 | — | — | 0 18 0 | 0 0 0 | Oct. 1877 |
| 40000 | South Aurora, c, t, Nevada | 5 0 0 | — | — | 0 14 0 | 0 0 0 | Nov. 1877 |
| 235000 | St. John del Rey (25 stock & multiples dealt in) | 305 315 | — | — | 0 11 6 | 0 0 0 | Mar. 1878 |
| 20000 | Tolima, c, t, St. America | 5 0 0 | — | — | 0 11 6 | 0 0 0 | Mar. 1878 |
| 25000 | Victoria (London), c, t, Australia | 1 0 0 | — | — | 0 12 6 | 0 0 0 | July 1878 |
| 15000 | Western Australia, c, t, New Granada | 5 0 0 | — | — | 0 12 0 | 0 0 0 | July 1878 |
| 91000 | W. Prussia (5000 pref. sh. 10l. pd) | 10 0 0 | — | — | 1 8 0 | 0 0 0 | Jan. 1878 |

NON-DIVIDEND FOREIGN MINES.

| Shares. | Mines. | Paid. | Last wk. | Clos. pr. | Total divs. | Per sh. | Last pd. |
|-----------|---|---------|----------|-----------|-------------|---------|----------|
| 5000 | Anguilla Phosphate, West Indies (4000 issued) | 10 0 0 | — | — | — | — | — |
| 12000 | Argentine, c, t, Argentine Republic | 5 0 0 | — | — | — | — | — |
| 80000 | Bellavista, c, t, Peru (210 shares) | 5 0 0 | — | — | — | — | — |
| 80000 | Blue Tent, c, t, (210 shares) | 5 0 0 | — | — | — | — | — |
| 49935 | Chontales, c, t, Nicaragua | 2 0 0 | — | — | — | — | — |
| 16000 | Condes de Chilli, c, t, Chile | 5 0 0 | — | — | — | — | — |
| 20000 | English Austral., c, t, Victoria | 1 0 0 | — | — | — | — | — |
| 50000 | Excelsior Hydraulic Gold Washing Co., California | 6 0 0 | — | — | — | — | — |
| 100000 | Exchequer, c, t, California | 1 0 0 | — | — | — | — | — |
| 40000 | Holcombe Valley, c, t, California | 1 0 0 | — | — | — | — | — |
| 8000 | Hornos, c, t, Spain | 10 0 0 | — | — | — | — | — |
| 12000 | Hultafall, c, t, Sweden | 5 0 0 | — | — | — | — | — |
| 12000 | Hunter Consolidated, c, t, Utah | 10 0 0 | — | — | — | — | — |
| 20000 | Imperial Brazilian Collieries, Brazil | 4 0 0 | — | — | — | — | — |
| 109000 | I. X. L., c, t, California | 1 0 0 | — | — | — | — | — |
| 50000 | Jarvis, c, t, Nicaragua | 2 0 0 | — | — | — | — | — |
| 2500 | La Mancha, c, t, Newfoundland | 10 0 0 | — | — | — | — | — |
| 12000 | Lancaster, c, t, Venezuela | 1 15 0 | — | — | — | — | — |
| 75000 | Malabar, c, t, Colombia (27185 issued) | 1 0 0 | — | — | — | — | — |
| 40000 | Malpaso, c, t, Colombia (7400 pref. shares, fully paid) | 1 0 0 | — | — | — | — | — |
| 12000 | Menzenberg, c, t, Hesse, Germany | 5 8 0 | — | — | — | — | — |
| 4583 | New Bonberg, c, t, Germany | 5 0 0 | — | — | — | — | — |
| 65000 | New Quebrada, c, t, Venezuela | 5 0 0 | — | — | — | — | — |
| 20000 | New Zealand Kapanga, c, t, Coromandel | 5 0 0 | — | — | — | — | — |
| 3000 | Oregon, c, t, Oregon, U.S. (preference shares) | 4 0 0 | — | — | — | — | — |
| 50000 | Panuello, c, t, Chile (280000 debentures) | 4 0 0 | — | — | — | — | — |
| 80000 | Pasternau United, c, t, Italy | 5 0 0 | — | — | — | — | — |
| 50000 | Providencia and New Rosario, c, t, Mexico | 1 0 0 | — | — | — | — | — |
| 60000 | Rica, c, t, Colombia (40000 issued) | 1 0 0 | — | — | — | — | — |
| 2,181,000 | Rio Tinto, c, t, Huelva, Spain | 1 0 0 | — | — | — | — | — |
| 100000 | Rosa Grande, c, t, Brazil (21 shares) | 50 0 0 | — | — | — | — | — |
| 30000 | Russia Copper, c, t, Orenburg and Ufa | 0 19 0 | — | — | — | — | — |
| 25000 | San Pedro, c, t, Chile | 10 0 0 | — | — | — | — | — |
| 10000 | Silver Pinner, c, t, Colorado | 2 0 0 | — | — | — | — | — |
| 80000 | Tecoma, c, t, Utah | 1 0 0 | — | — | — | — | — |
| 43174 | United Mexican, c, t, Mexico | 28 15 3 | — | — | — | — | — |
| 4300 | Utah, c, t, Utah | 5 0 0 | — | — | — | — | — |
| 25000 | Virneburg, c, t, Rheinbreitbach, Germany (22 shares) | 1 15 0 | — | — | — | — | — |
| 15000 | Yorke Peninsula, c, t, South Australia | 1 0 0 | — | — | — | — | — |
| 40000 | Yorke Peninsula, c, t, South Australia Preference | 1 0 0 | — | — | — | — | — |

Have made calls since last dividend was paid.

| Foreign and Miscellaneous Stocks, Bonds, Loans, and Trusts. | Closing Prices. |
|---|-----------------|
| Argentine, 1885, 6 per cent. | 70 7 7 |
| Bolivia, 6 per cent. | 23 1/4 |
| Brazilian, 1865, 5 per cent. | 94 66 |
| Chilian, 1866, 7 per cent. | 102 104 |
| City of Providence, 5 p.c. coupon bonds | 100 102 |
| Egyptian, 5 per cent. pref. | 54 55 |
| Do., unified debt, scrip | 29 1/2 |
| Do., 7 per cent. V.M.L. | 63 66 |
| Do., 9 per cent. guar. | 65 70 |
| Do., K. Daira Sanieh | 40 42 |
| Foreign and Col. Gov. Trust, 5 p.c. st. | 65 66 |
| Do., 5 per cent., 2d issue | 50 55 |
| Do., 6 per cent., 3d issue | 55 60 |
| Do., 1872, 4th issue | 48 53 |
| Do., 1873, 5th issue | 60 65 |
| Peruvian, 1870, 6 per cent. | 14 15 |
| Do., 1872, 6 per cent. | 12 1/2 |
| Russian, 4 1/2 per cent. L. Mort. | 12 1/2 |
| Spanish, Quicksilver Mort., 5 p.c. st. | 97 90 |
| United States Mort., 6 per cent. | 93 100 |